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## Technical Note

## 1966-11

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## Haystack Pointing System: Print Program

9 March 1966

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## Lincoln Laboratory

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Lexington, Massachusetts



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MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
LINCOLN LABORATORY

HAYSTACK POINTING SYSTEM: PRINT PROGRAM

*J. D. DRINAN*

*Group 62*

TECHNICAL NOTE 1966-11

9 MARCH 1966

LEXINGTON

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## ABSTRACT

During the operation of the Haystack Pointing System, variable amounts of system generated data are recorded on magnetic tape for purposes of later reconstruction of the pointing aspect of the experiment. The Print Program, a pseudo-celestial computation program, is the means whereby this system data, recorded during actual system operation or during a system planning run, is reconstituted in the form of print-outs for immediate inspection or as BCD magnetic tape equivalents of the print-outs for remote printing and for input to other programs. The Print Program provides a variety of operation options which can be altered dynamically.

Accepted for the Air Force  
Franklin C. Hudson  
Chief, Lincoln Laboratory Office

## HAYSTACK POINTING SYSTEM: PRINT PROGRAM

### INTRODUCTION

The Print Program (PP) is the means whereby system data, recorded on magnetic tape during actual system operation or during a system planning run, is converted to on-line print-outs for visual inspection and to BCD magnetic tape equivalents of the print-outs for remote printing as well as for input to other programs.

PP resides on the master bootstrap tape as a pseudo-celestial computation program as a matter of convenience in calling the program to operate after system operation is completed.

PP uses the Printer Package\* subroutine and a right ascension-declination conversion routine adapted from the Right Ascension-Declination Display Program.<sup>†</sup>

### INPUT

Primary input to PP is the system produced high density (556 lpi) binary tape written by the system subprogram RECORDING.<sup>‡</sup> PP is concerned with only two types of records on this tape. The first type is the so-called title record which contains the titling information supplied by the experimenter and certain other pertinent data. This record is viewed by PP as a "Logical file" separator and is recognized as such by the fact that the first word contains the five Fielddata character representation of TITLE. The second type is the record which contains all of or a selected part of the portions of Common Storage (C/S) necessary to produce the desired output. The first word identifier for this record is MCPGM.

These two classes of records contain all of standard system generated information necessary to reconstruct the pointing aspect of the experiment. Data processing programs are free to avail themselves of the recording facility provided by the system and thereby record information on the system data recording tape. PP, however, was designed to interpret the format unique to the system data and consequently ignores non-system records.

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\*See Reference 1.

†See Reference 2.

‡See Reference 3.

Input information to PP is also supplied by the user via the keyboard. This will be discussed in the Operation section below.

## OUTPUT

The user may elect to get his print-out directly on the high-speed printer or he may choose to produce an IBM-compatible BCD magnetic tape or he may get both of these simultaneously. Various control options which govern the format and amount of output are offered. These are discussed in the Operation section below.

Figure 1 shows a sample output of the program. The labeling and the units used are described in Appendix A.

## OPERATION

The Print Program is a non-real-time program which is normally called to operation after the dynamic system has completed a run and has produced a magnetic tape recording which serves as input to PP. The usual manner in which the Master Control Program\* (MCP) brings PP into core memory from the master bootstrap tape is via the attention symbol sequence.

Once MCP has read PP into core the role of control program is taken over by PP. This arrangement makes it possible for the user to communicate via the attention symbol with PP as the recorded data is being processed in the very same manner as the experimenter was able to communicate with MCP while the experiment was in progress.

When PP assumes control then, one of the very first things done is the setting up of a new intercom interlace<sup>†</sup> establishing PP as the control program. From this point until a return is made to the system proper, hitting the attention key will cause the following typeout:

TO SYSTEM(0) NEXT 'FILE'(1) NEW TIMES(2)

If the user elects choice (0) an exit is made to MCP and the system is ready for the next experiment with the recording tape returned to the load point for re-recording.

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\*See Reference 4.

†See Reference 4 and 5.

LES II

HH	MM	SS	RA(IDEGL)	DEC(UEGL)	DISTANCE	DISTDOT	RADOT	AZIM	ELEV	CAZIM	TRUERANGE	RA(HMHS)	DEC(DMHS)
19	26	55	42.7534	10.4070	2.83677363	-0.80338	1.8777370	254.2753	11.1016	254.2753	2.4691207	2 51	0.83
			SRA	SDEC	CRANGE	RANGEDOT	DEC DOT	SAZIM	SELEV	CELEV			
			42.7534	10.4070	525105	-0.77916	-1.1089678	254.2753	11.1016	254.2753	11.1020	99.4627	

03

LES II

TIME	INCOMING	INCOMING	COMMAND	RECDV	R/A	RECDV	DECLN	COMMAND	R/A	COMMAND	DECLN	COMMAND	DOPLR	MODES	
SECS	AZIMUTH	ELEVATION	AZIMUTH	MM	SS	MM	SS	HH	MM	SS	HH	MM	SS	CYCLES/SEC.	
0.000*254.2751	11.2019	254.2751	11.2019	2	51	15.25	10	27	49.7	2	51	15.25	10	27	49.7
0.400*254.2710	11.2010	254.2710	11.2012	2	51	16.15	10	27	39.2	2	51	16.15	10	27	39.2
0.800*254.2663	11.2006	254.2669	11.2005	2	51	17.5	10	27	28.6	2	51	17.5	10	27	28.6
1.200*254.2623	11.2006	254.2621	11.2006	2	51	18.4	10	27	19.5	2	51	18.4	10	27	18.0
1.600*254.2580	11.1999	254.2580	11.1999	2	51	19.4	10	27	7.5	2	51	19.4	10	27	7.5

LES II

HH	MM	SS	RA(IDEGL)	DEC(UEGL)	DISTANCE	DISTDOT	RADOT	AZIM	ELEV	CAZIM	TRUERANGE	RA(HMHS)	DEC(DMHS)
19	26	57	42.7753	10.3943	2.83630705	-0.80377	1.8782773	254.2538	11.0986	254.2538	2.4636687	2 51	6.
			SRA	SDEC	CRANGE	RANGEDOT	DEC DOT	SAZIM	SELEV	CELEV			
			42.7753	10.3943	525009	-0.77843	-1.1094618	254.2538	11.0986	254.2538	11.1991	99.4711	

03

LES II

TIME	INCOMING	INCOMING	COMMAND	RECDV	R/A	RECDV	DECLN	COMMAND	R/A	COMMAND	DECLN	COMMAND	DOPLR	MODES	
SECS	AZIMUTH	ELEVATION	AZIMUTH	MM	SS	MM	SS	HH	MM	SS	HH	MM	SS	CYCLES/SEC.	
0.000*254.2538	11.1992	254.2538	11.1992	2	51	20.49	10	27	4.8	2	51	20.49	10	27	4.8
0.400*254.2497	11.1985	254.2497	11.1985	2	51	21.39	10	26	54.3	2	51	21.39	10	26	54.3
0.800*254.2456	11.1978	254.2449	11.1978	2	51	22.29	10	26	43.8	2	51	22.39	10	26	42.2
1.200*254.2408	11.1971	254.2408	11.1971	2	51	23.28	10	26	31.7	2	51	23.28	10	26	31.7
1.600*254.2367	11.1964	254.2367	11.1964	2	51	24.18	10	26	21.2	2	51	24.18	10	26	21.2

Fig. 1. Sample output of Print Program.

A choice of (1) will cause PP to search for the next logical file on the recording tape identified by the code word TITLE as the first word in the record. When the next "file" is located PP will issue a subset of the typeouts and questions that are output when the first logical file is about to be processed. (This set of typeouts is described below.) When "new times", choice (2) is elected PP will initiate another subset of the original line of questioning.

The balance of this memo concerns itself with question-answer sequence one encounters when using PP to process the system data tape. At this point we shall assume that the experiment has been concluded and the user has directed the control program to load PP into memory.

At the outset, PP now established as the control program senses whether or not the recording program has finalized the recording tape and if not will ask:

TAPE IS OK(0) REWIND IT(1) END FILE & REWIND(2)

PP will take whatever action is indicated by the user. Now the question of output media comes up, whether direct high-speed printer or BCD tape or both - hence the question:

ELECT O/P... HSP(0) BCD TAPE(1) BOTH(2)

Here, of course, the user must indicate the type of output(s) he desired.

Next, as a memory jog, the typeout:

SET TOP OF PAGE CLEAR PRINTER CHANNEL

Now PP begins a search of the tape for the first TITLE record. When it is located PP prepares the heading record which appears ahead of each frame. In Fig. 1 this is the line containing LES 2 as the titling information along with Friday May 21, 1964 SATELLITE SYSTM, the other pertinent information in the title record. At this point PP types out:

TITLE FOLLOWS

followed by the actual titling information entered earlier by the experimenter. In the example at hand this would be:

LES II

Now comes the question:

GMT START(HHMMSS)

to which the user may enter a time to start (and PP will skip over previously recorded data) or he may implicitly state "at the beginning" by simply answering with a carriage return. Next comes the companion question:

GMT END(HHMMSS)

and here again the user may elect a specific time to stop or implicitly indicate "to the end" with the carriage return reply. Now the question:

FOR EVERY NTH DATUM ENTER N(0-500)

Here the user must indicate how much (if any) of the interpolated data he wishes to be printed out. For every frame (2 seconds in real time) there are available the directly computed quantities as well as 500 interpolated command azimuth and elevation angles, the corresponding 500 incoming azimuth and elevation angles plus 500 interpolated doppler values. If the user wishes every interpolated point to be printed, he would enter N as 1 and every 1<sup>th</sup> point is output. On the other hand, if he chose N as 500 he would see only the first interpolated point (as well as the entire array of 2 second computed data whose output is non selectable). By convention N = 0 will eliminate all interpolated data from the output.

At this point, PP is ready to commence processing the data on the recording tape. In a steady state condition PP is time equating data which appeared in three separate input records. For the incoming azimuth and elevation angles, the record just read in is used; for the command azimuth and elevation angles the penultimate record is the source and for the two second directly computed values the data saved from the third record back is used.

In general, the program will continue to cycle and output in this manner until one of four things occur. The first, an end of file mark on the input tape will result in the typeout:

END OF FILE...RETURNING TO SYSTEM

Here control is returned to MCP, the input tape is returned to the load point and the system is ready to recycle.

The second source of interruption occurs when PP has come to a specified time to stop (GMT END(HHMMSS)).

In this case PP types out:

DONE....

followed by the typeout normally occasioned by striking the attention key i.e.

TO SYSTEM(0) NEXT 'FILE'(1) NEW TIMES(2)

Again the user must decide what is to be done.

The next way in which the cycle is disrupted occurs when PP encounters a new "logical file" on the input tape. This causes PP to terminate processing on the current file and proceed with the typeout/question sequence starting with

TITLE FOLLOWS

The remaining way in which processing is interrupted is, of course, by the user himself striking the attention key.

The flow diagram and listing of the Print Program follow Appendix A.

## APPENDIX A

The sample print-out in Fig. 1 shows 4 seconds worth of real-time pointing information in two 2 second frames. Each frame begins with a title line which gives the identification information (here the caption LES II) supplied by the user followed by the day of the week, the date and the particular celestial computation program chosen by the user.

The pointing information for each frame is broken down into two categories, the "two second" direct-computation data followed by the interpolated data.

### Two Second Data

HHMMSS	...	Greenwich mean time at the start of the frame. (Time in C/S TRUETIME). This is the reference time for this frame.
RA(DEG)		and further to the right of the page on the same line
RA(HMS)	...	Right ascension of the body at reference time in degrees and in hours, minutes, and seconds respectively.
DEC(DEG)		and further to the right of the page on the same line
DEC(DMS)	...	Declination of the body at reference time in degrees and in degrees, minutes and seconds respectively.
DISTANCE	...	The distance from geocenter to center of the body at reference time in earth radii for near-earth satellites and the moon; in astronomical units for the sun and planets. For stars an arbitrary zero is printed.
DISTDOT	...	Numerical derivative of DISTANCE in nautical miles per second.
RADOT	...	Numerical derivative of right ascension in radians per second. N. B. This quantity is taken from C/S register RADOT which contains $\dot{\alpha} \cos \delta$ . A planned change to PP will remove the $\cos \delta$ factor.
AZIM	...	Computed azimuth in degrees.
ELEV	...	Computed elevation in degrees.
CAZIM	...	AZIM with corrections in degrees.
TRUE RANGE	...	Range of the body from the site with same units conventions described under DISTANCE.
SRA	...	Right ascension in degrees with scan added.

SDEC	...	Declination in degrees with scan added.
CRANGE	...	Corrected range in radar units.
RANGEDOT	...	Time derivative of range in nautical miles per second.
DECDDOT	...	Time derivative of declination in radians per second.
SAZIM	...	Azimuth in degrees with scan added.
SELEV	...	Elevation in degrees with scan added.
CELEV	...	Elevation in degrees with corrections added.
SIDERTIME	...	Right ascension of the site in degrees at CONVERTIME.

#### Interpolated Data

TIME	...	
SECS	...	Elapsed time in seconds (for real time) from HH MM SS (TRUETIME given above).
INCOMING AZIMUTH	...	Actual antenna position in degrees at indicated time. An * preceding the value indicates azimuth overlap zone.
INCOMING ELEVATION	...	Analogous to incoming azimuth.
COMMAND AZIMUTH	...	Interpolated azimuth value in degrees sent to the antenna at the indicated time.
COMMAND ELEVATION	...	Analogous to azimuth.
RECVD R/A HH MM SS. SS		
and		
RECVD DECLN DDD MM SS.S	...	Actual antenna position in the right ascension-declination coordinate system.
COMND R/A HH MM SS		
and		
COMND DECLN DDD MM SS.S	...	The position in celestial coordinates to which the antenna was being directed.

CMND DOPLR

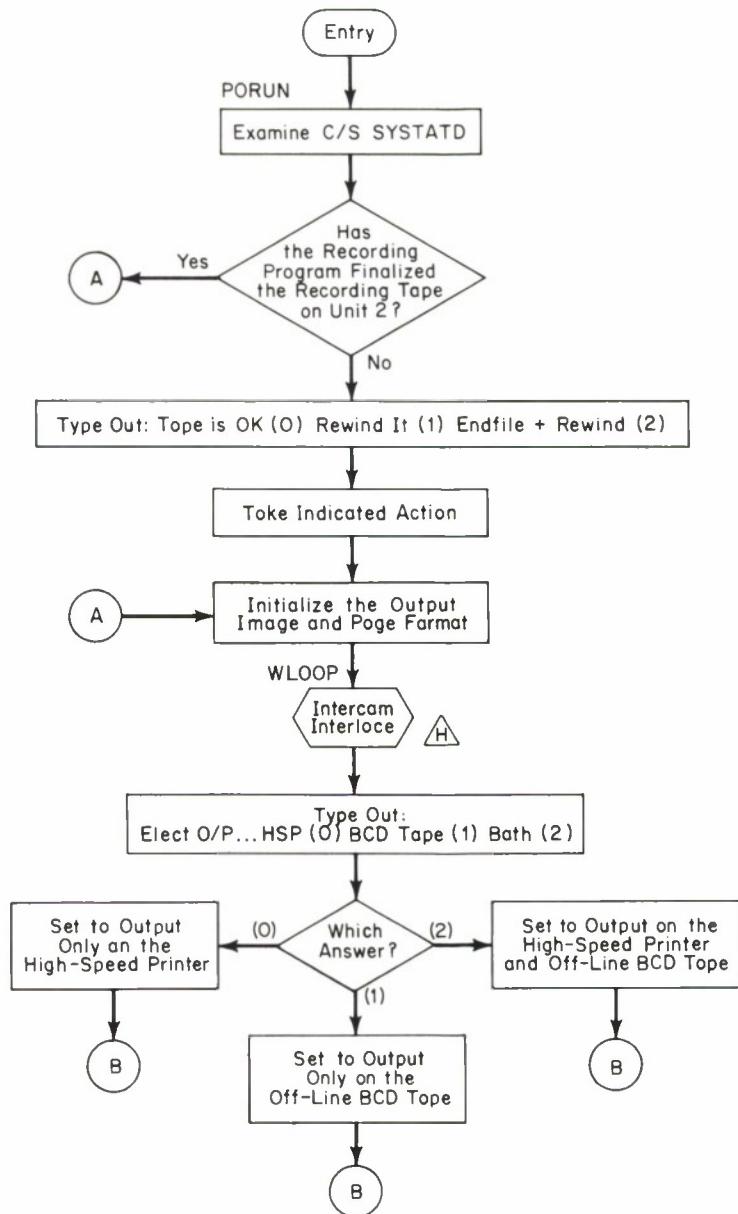
CYCLES/SEC . . . Doppler frequency in cycles per second.

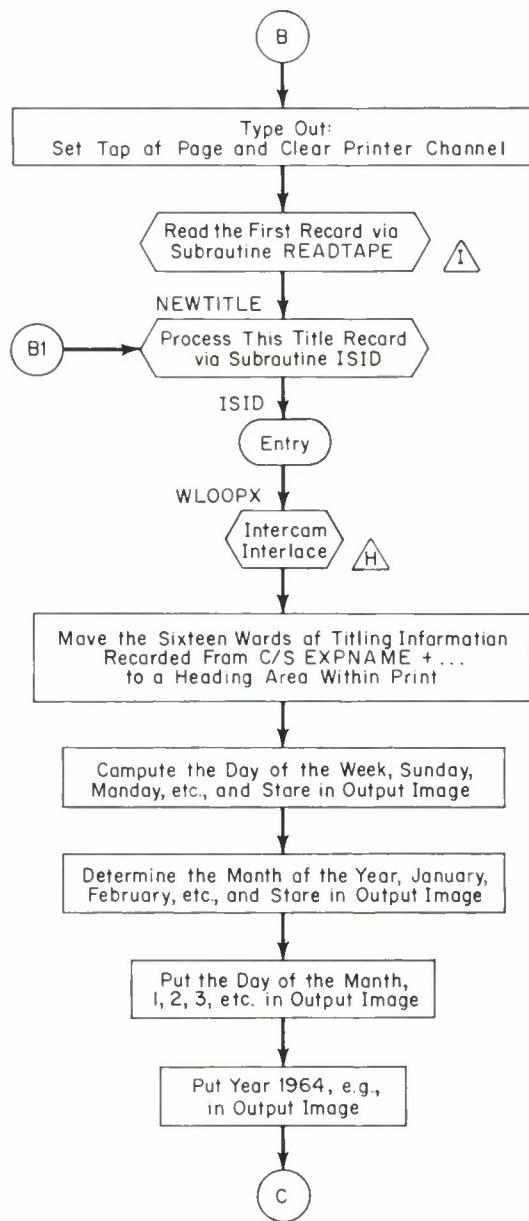
MODES

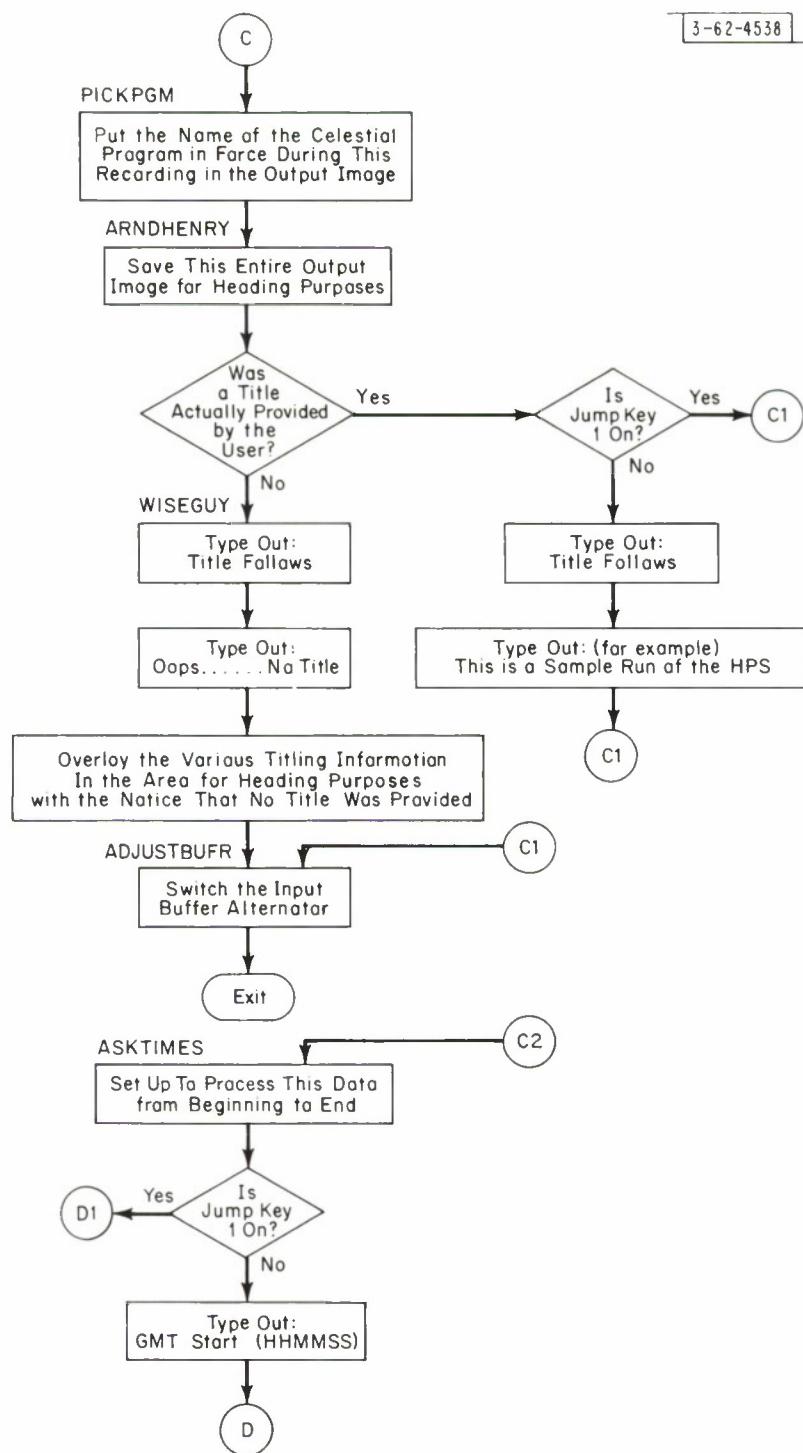
ABCDE . . . Mode switches setting. Not currently used.

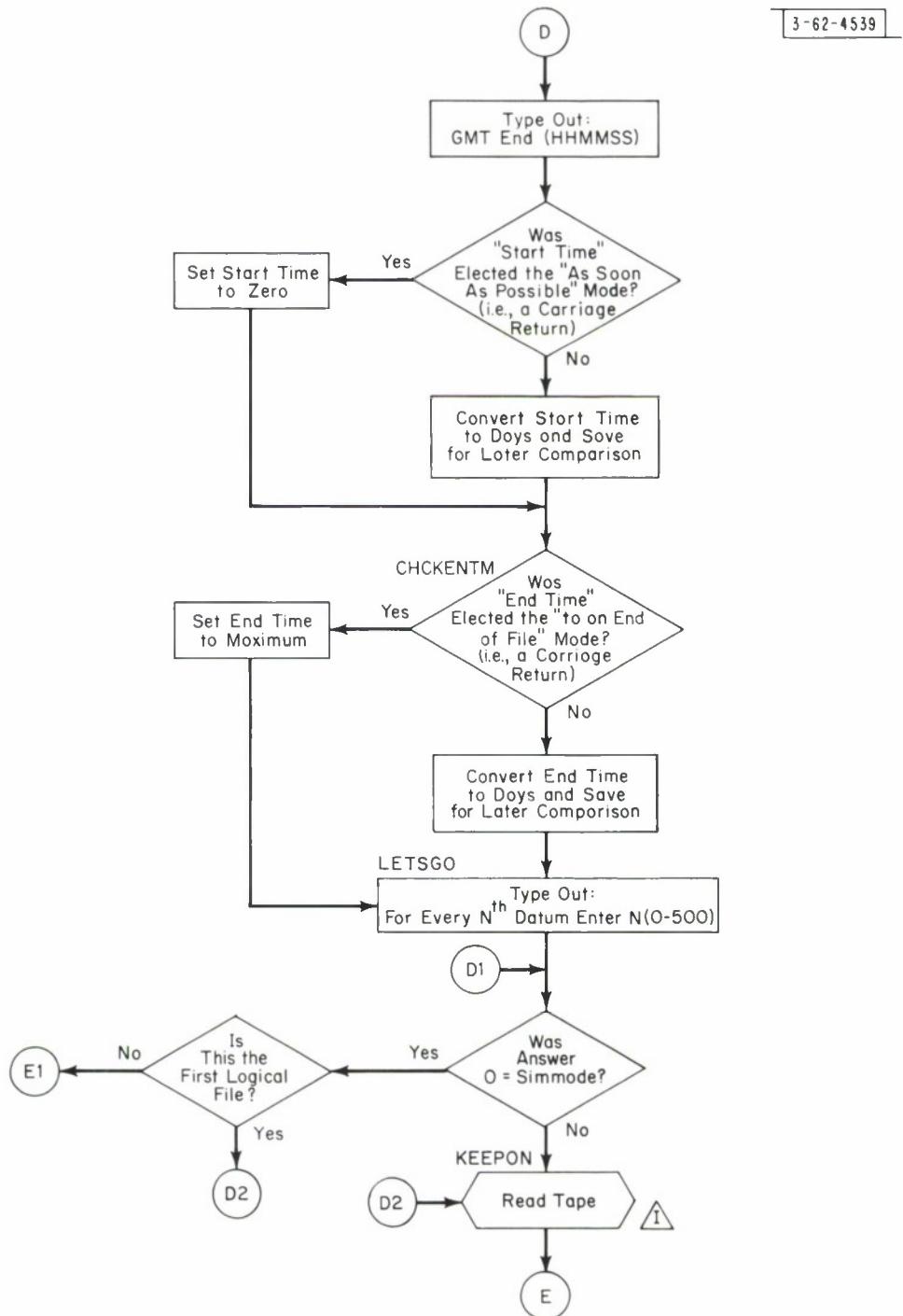
PRINT PROGRAM: FLOW CHART

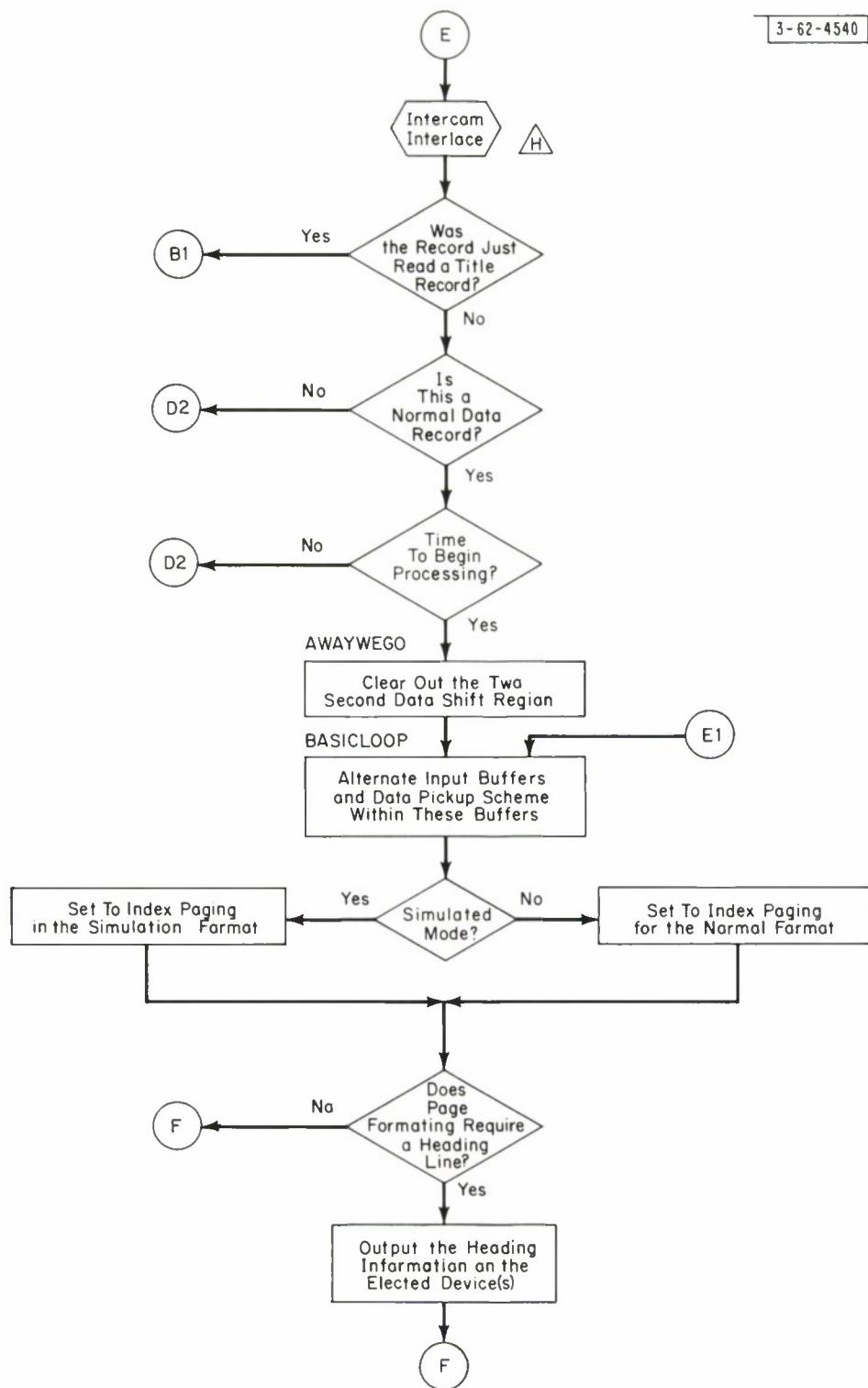
3-62-4536

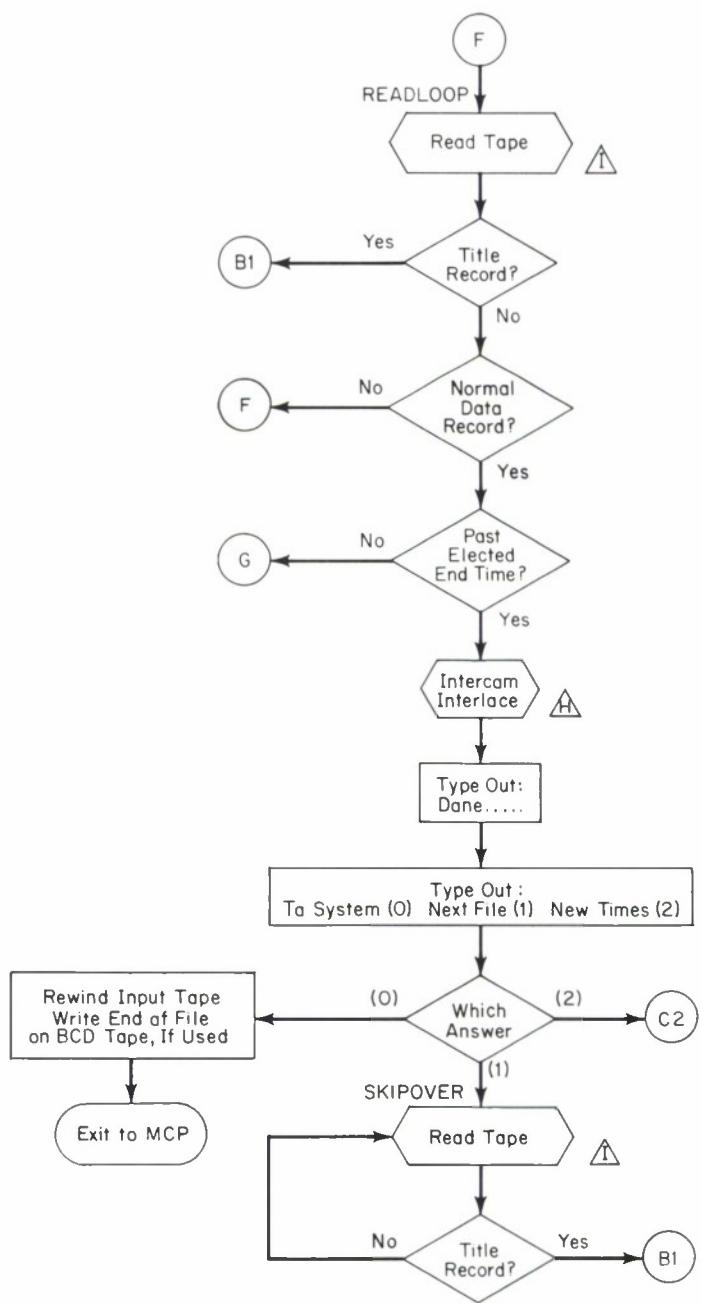


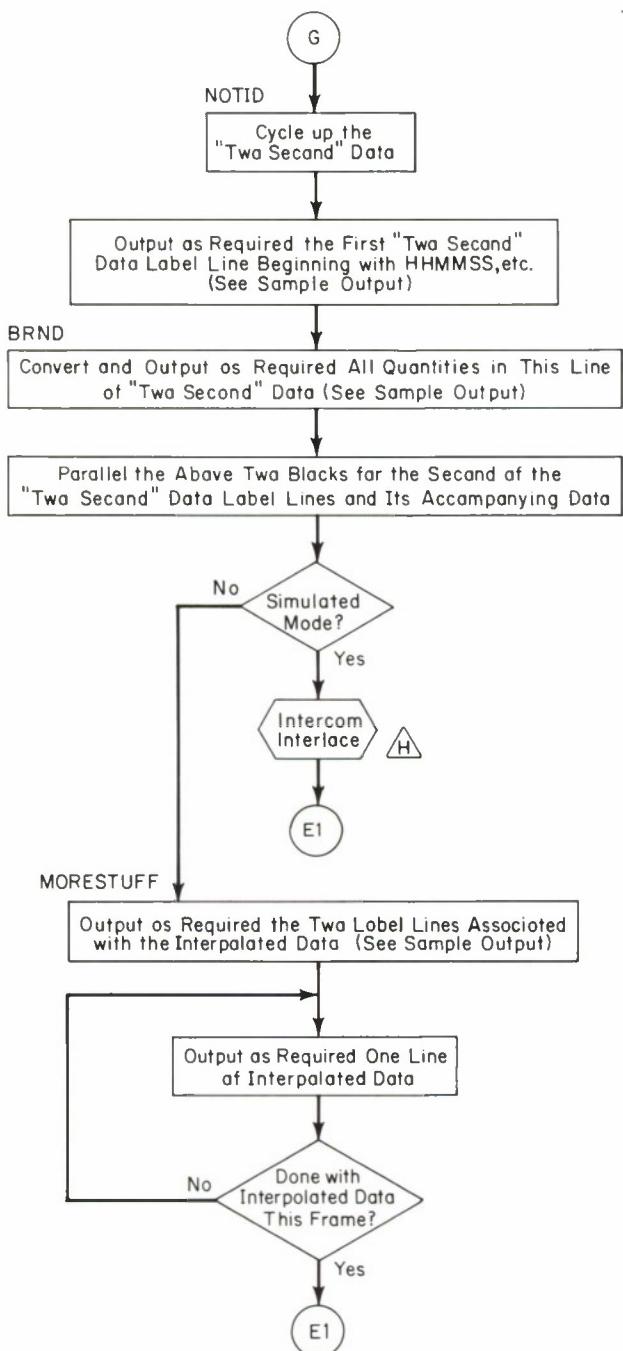






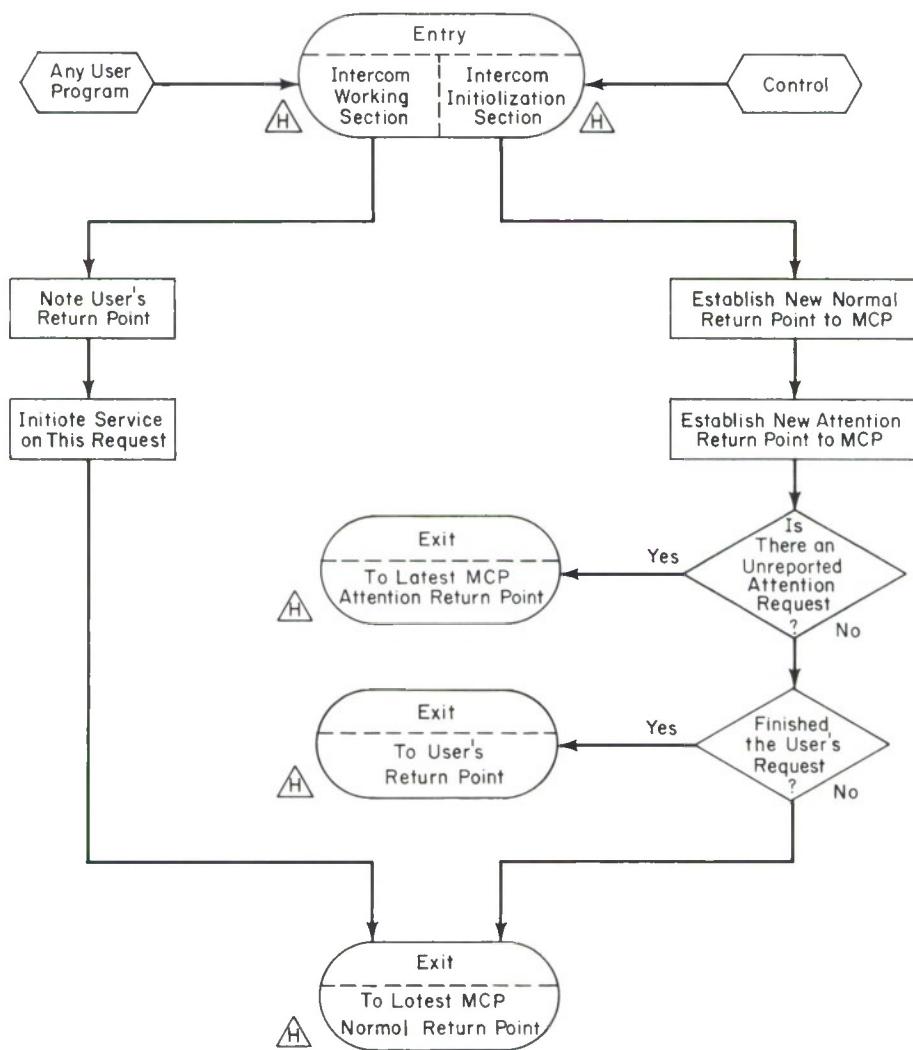






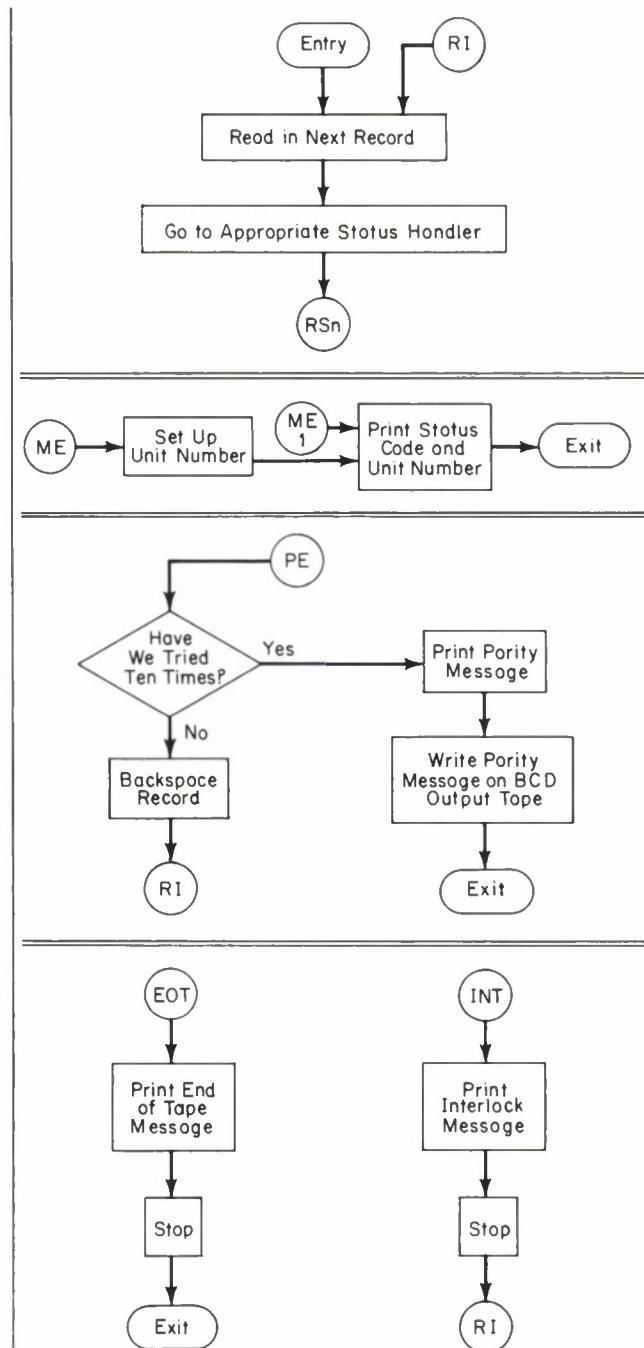
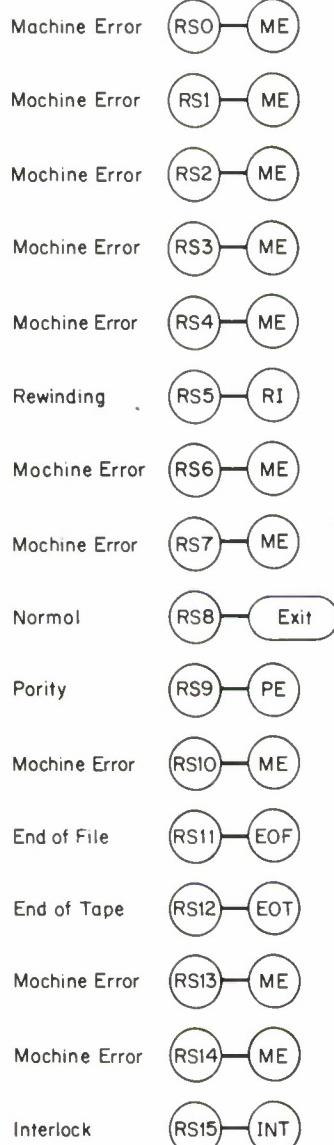
## INTERCOM INTERLACE

3-65-4543



## READ ROUTINE

3-62-4544



SPURT OUTPUT NO. 210  
J00\*1/22/65

LOC	F	J	K	R	Y	NOTES
00000	PRINTOUT	TA STATEMENT	PROGRAM	J00*1/22/65		
00001	CO001	TAPE	MEANS	C15		
00002	CO002	TYPE	MEANS	C2		
00003	CO003	HSP	MEANS	C3		
00004	CO004	FRPERPAGE	EQUALS	7		
00005	CO005	DATA	EQUALS	101CELOR		
00006	CO006	DATA2	EQUALS	MCPFILLER		
00007	CO007	DELTAO	EQUALS	MCPFILLER-101CELOR		
00010	CO010	PRINTOUT	U-TAG	PORUN•PORUN		
00011	CO011		FO	1•PRINT		
00012	CO012	PORUN	ENTRY	FRPERPAGE•L(TITLECNT)		
00013	CO013		PUT			
00014	CO014		CL	W(SIMSWITCH)		
00015	CO015		ENT	A•W(SYSTATO)•AZERO		
00016	CO016		JP	NOREW	00007	TAPE HAS EOF ETC
00017	CO017		CL	W(REWYORN)	00010	
00020	CO020		RJP	U(INTERCOM)	00011	
00021	CO021		U-TAG	TOREW•TOREW	00012	
00022	CO022		ENT	A•L(REWYORN)•ANOT	00013	
00023	CO023		JP	NOREW	00014	
00024	CO024		PUT	W(WHERETOGO)•W(351)	00015	
00025	CO025		SUB	A•1•ANOT	00016	
00026	CO026		JP	FILE00NE	00017	
00027	CO027		EX-FCT	TAPE•12300000004	00021	
00030	CO030		JP	\$	00022	W/INTERRUPT
00031	CO031	FILE00NE	STR	TAPE•W(STAT)	00023	
00032	CO032		PUT	NOREW•L(351)	00024	
00033	CO033		EX-FCT	TAPE•3010000004	00025	
00034	CO034		JP	\$	00026	
00035	CO035	NOREW	STR	TAPE•W(STAT)	00027	
00036	CO036		RJP	PIMAGE	00030	
00037	CO037		O	MYOUT	00032	
00040	CO040		RJP	E	00033	
00041	CO041		RJP	PFORM	00034	
00042	CO042		5	2	00035	
00043	CO043		RJP	E	00036	
00044	CO044		RJP	PBLANK	00037	
00045	CO045		1	1280	00041	
00046	CO046		RJP	E	00042	
00047	CO047	RESTART	PUT	12000•U(INSERT)	00043	SET TO NO-OP
00050	CO050	WLOOP	RJP	L(INTERCOM)	00044	
00051	CO051		RJP	WHATOO	00045	
00052	CO052	INSERT	NO-OP		00046	
00053	CO053		PUT	W(INSERT)•W(INSERT)	00047	
00054	CO054		CL	W(ANSOUTPUT)	00050	
00055	CO055		CL	W(HSPOUTPUT)	00051	
00056	CO056		STR	BO•CPW{BCOOUTPUT}	00052	

SPURT OUTPUT NO. 210  
J00\*1722/65

CARDS	L1	I0	LABEL	TA	STATEMENT	LOC	F	JK8	Y	NOTES
			00057	RJP	U(INTERCOM) U-TAG	00054	65020	53426		
			00060	ENT	BCDQUES*BCOANS	00055	03372	03406		
			00061	JP	A*W(LANSOUTPUT 1*ANOT	00056	11530	03412	JUST HSP	
			00062	JP	STANOEQSE	00057	61000	00071		
			00063	SUB	A*1*ANOT	00060	21500	00001		
			00064	STR	BO*CM(HSPOUTPUT1	00061	16070	03370	WAS 1 = JUST BCO	
			00065	CL	W(BCOOUTPUT1	00062	16030	03371	WAS 2 = BOTH	
			00066	ENT	A*L(LANSOUTPUT)	00063	11010	03412		
			00067	SUB	A*1*AZERO	00064	21400	00001		
			00070	JP	STANOEQSE	00065	61000	00071	IS BCO ONLY INCREASE LINES/2A\$	
			00071	PUT	90*L(TITLECNT1	00066	10000	03001	F	
						00067	14010	02027		
						00070	14010	00274		
						00071	65020	53426		
						00072	01770	00000		
						00073	65000	03074		
						00074	72640	63000		
						00075	11030	53000	IS TITLE RECORD	
						00076	21430	04415		
						00077	61000	00073		
						00100	65000	01403		
			00072	STANOEQSE	RJP	00101	16070	04502		
			00073	STANOEQSE	ISIO	00102	16070	04517		
			00074	STANOEQSY	STR	00103	61100	00166		
			00075	STANOEQSY	BO*CM(WANSSTTM1	00104	65020	53426		
			00076	STANOEQSY	TELLTOP*0	00105	04467	04476		
			00077	STANOEQSY	STR	00106	65020	53426		
					READTAPE	00107	04503	04512		
					U-TAG	00111	10230	04502		
					DATA+40000*DATA	00112	00111	61000	01575	
					ENT	00113	00112	11000	00000	
					A*W(COATA1	00114	00113	23000	23420	
					SUB	00115	00114	14030	04523	
					A*WLTITLEKEY1*AZERO	00116	00115	15000	00000	
					JP	00117	00116	11000	00000	
					STANOEQSY	00118	00117	23000	00144	
					RJP	00119	00120	14030	04524	
					U-TAG	00120	00121	15030	04525	
					U(INTERCOM)	00121	00122	10030	04523	
					U-TAG	00122	00123	22000	07020	
					ETQUES*ETANS	00123	00124	00124	04531	
					ENT	00124	00125	10030	04531	
					Q*W(LANSSTTM1*QPOS	00125	00126	00126	04531	
					STR	00126	00127	10030	04531	
					STR	00127	00128	10030	04531	
					CL	00128	00129	10030	04531	
					A*	00129	00130	10030	04531	
					OIV	00130	00131	10030	04531	
					100000	00131	00132	10030	04531	
					STR	00132	00133	10030	04531	
					Q*W(LOMSSECTTG1	00133	00134	10030	04531	
					CL	00134	00135	10030	04531	
					Q*	00135	00136	10030	04531	
					RSH	00136	00137	10030	04531	
					AQ*2	00137	00138	10030	04531	
					OIV	00138	00139	10030	04531	
					864000	00139	00140	10030	04531	
					STR	00140	00141	10030	04531	
					CHCKENTM	00141	00142	10030	04531	
					STAYATE	00142	00143	10030	04531	

SPURT OUTPUT NO. 210  
JUN 1 1965

CAROS	L1	I0	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
	00142			CL	A*	00140	11000	00000		
	00143			01V	100000	00141	23000	23420		
	00144			STR	Q*W10MEHRS)	00142	14030	04526		
	00145			STR	A*Q	00143	15000	00000		
	00146			CL	A*	00144	11000	00000		
	00147			01V	1000	00145	23000	00144		
	00150			STR	Q*W10MEMINS)	00146	14030	04527		
	00151			STR	A*W10MESECS)	00147	15030	04530		
	00152			ENT	Q*W10MEHRS)	00150	10030	04526		
	00153			MUL	36000	00151	22000	07020		
	00154			STR	Q*W10MESECTTG)	00152	14030	04532		
	00155			ENT	Q*W10MEMINS)	00153	10030	04527		
	00156			MUL	600	00154	22000	00074		
	00157			RPL	Y+Q*W10MESECTTG)	00155	34030	04532		
	00160			ENT	Q*W10MESECS)	00156	10030	04530		
	00161			RPL	Y+Q*W10MESECTTG)	00157	34030	04532		
	00162			CL	Q*	00160	10000	00000		
	00163			RSH	AQ*2	00161	03000	00002		
	00164			01V	864000	00162	23030	07500		
	00165			STR	Q*W10COMPAREET)	00163	14030	04521		
	00166		LETSGO	RJP	U1INTERCOM)	00164	65020	63426		
	00167			U-TAG	EVERYN*SAVIT	00165	02005	02021		
	00170		REVITAL	ENT	A*W10SPOUTPUT)AZERO	00166	11430	03370		
	00171			JP	SEARCHTAPE	00167	61000	00173		
	00172			RJP	PFORM	00170	65000	05773		
	00173			5	2	00171	00005	00002		
	00174		SEARCHTAPE	RJP	E	00172	65000	02202		
	00175			ENT	A*LIHOWMANY)*AZERO	00173	11410	02067	SIM MODE = ZERO	
	00176			JP	NWSRCHTP	00174	61000	00200		
	00177			ENT	A*W10SIMSWITCH)AZERO	00175	11430	02025		
	00200			JP	BASICLOOP	00176	61000	00236		
	00201		NWSRCHTP	STR	BO*CPW10SIMSWITCH)	00177	16070	02026		
	00202			ENT	A*DATA2	00200	11000	71000		
	00203			SUB	A*DATA	00201	21000	53000		
	00204			ENT	B3*A	00202	12370	00000		
	00205		KEEPON	RJP	READAPE	00203	65000	03074		
	00206			U-TAG	DATA2+40000*DATA2	00204	00641	71000		
	00207			RJP	L1INTERCOM)	00205	65010	53426		
	00210			RJP	WHADDO	00206	65000	00357		
	00211			ENT	A*W10ATA2)	00207	11030	71000		
	00212			SUB	A*W10TITLEKEY)*ANOT	00210	21530	34415	NEW LOGICAL FILE	
	00213			JP	NEWTITLE	00211	61000	00100		
	00214			ENT	A*W10ATA2)	00212	11030	71000	F	
	00215			SUB	A*W10CSKEY)*AZERO	00213	21430	04533	IS COMMON STORAGE	
	00216			JP	KEEPON	00214	61000	00203		
	00217			ENT	A*W10ANSSTTM)*APOS	00215	11530	04502		
	00220			RJP	AWAYWEGO	00216	61000	00222		
	00221			ENT	A*W10TRUETIME+B3)	00217	11033	53132		
	00222			SUB	A*W10COMPAREST)*APOS	00220	21530	04520		
	00223			JP	KEEPON	00221	61000	00203		
	00224		AWAYWEGO	RPT	800-ADV	00222	70100	00120		
	00225			CL	W1PLORA)	00223	16030	02502		
	00226			PUT	LIHOWMANY)*L1ADVANB1)	00224	10010	02067	HOWMANY	

CAROS		LI TO LABEL	TA STATEMENT	PRINTOUT	SPURT OUTPUT NO. 210 J00*1/22/65	LOC	F JKB Y	NOTES
•	00227		STR Q*L(CNTRPT)		00225	14010 01374		
•	00230		CL A*		00226	14010 01376		
•	00231		ENT Q*5000		00227	14000 00000		
•	00232		ENT Q*5000		00230	14000 00764		
•	00233		ENT L(HOWMANY)		00231	23010 02067		
•	00234		ENT Q*1		00232	27000 00001		
•	00235	LAUNCHED	STR Q*L(NOPTS1)		00233	14010 02215		LOOP CONTROL
•	00236		ENT A*		00234	11000 00001		
•	00237	BASICLOOP	STR A*L(MSWITCH)		00235	15010 02221		
•	00240		ENT RSE CP*L(MSWITCH)		00236	11000 00001		
•	00241		ENT B4*L(MSWITCH)		00237	55010 02221		
•	00242		ENT B3*L(IRSWITCH+B4)		00240	12410 02221		
•	00243		PUT W(UTAGSWITCH+B4)*W(VARYUTAG)		00241	12314 02222		
•	00244		STR Q*L(BACKWOS)		00242	10034 02224		
•	00245		STR Q*L(BACKWOSA)		00243	14030 00321		
•	00246		PUT L(AZINSW+B4)*L(FORAZIN)		00244	14010 03322		
•	00247		PUT L(FELINSH+B4)*L(FORELIN)		00245	14010 03325		
•	00250		PUT L(AZOUTSW+B4)*L(FORAZOUT)		00246	10014 02230		
•	00251		PUT L(ELOUTSW+B4)*L(FORELOUT)		00247	14010 01232		
•	00252		PUT L(COOPOUTSW+B4)*L(FOROOPOUT)		00250	10014 02232		
•	00253		PUT 7*U(TOPORNOT)		00251	14010 01253		
•	00254		ENT A*M(SIMSWITCH)*ANEG		00252	14010 02234		
•	00255		ENT NOTINSIM		00253	14010 01266		
•	00256		ENT A*M(BRANONEW)*ANOT		00254	10014 02236		
•	00257		JP \$+2		00255	14010 01307		
•	00260		JP CARRION		00256	11730 00306		
•	00261		STR BO-CPW(BRANONEW1		00257	00260 00007		
•	00262		CL UCTOPORNOT)		00261	14020 00306		
•	00263		JP NOTINSIM		00262	00263 61000 02026		
•	00264	CARRION	RPL Y-1*L(TITLECNT)*AZERO		00264	11530 02025		NEW TITLE
•	00265		JP REAOLOOP		00265	61000 00267		
•	00266	RESETCNT	ENT Q*FRPERPAGE		00266	61000 00272		
•	00267		STR Q*L(TITLECNT)		00267	00267 16070 02025		
•	00270	NOTOPPAGE	JP RJP PFO		00270	16020 00306		
•	00271		JP 0 MYHEAD		00271	61000 00276		
•	00272		JP 1280 1		00272	37410 02027		
•	00273		JP RJP E		00273	61000 00320		
•	00274		JP \$+3*KEY3		00274	00274 10000 00007		
•	00275		ENT A*M(HSPOUTPUT)*AZERO		00275	14010 02027		
•	00276		JP \$+4		00276	00276 65000 05557		
•	00277		RJP PSCRIB		00277	00277 00000 02242		
•	00300	TOPORNOT	7 3		00278	00300 00001		
•	00301		RJP E		00279	65000 02202		
•	00302		ENT A*M(BCDOOUTPUT)*AZERO		00280	00302 61300 00305		
•	00303		JP REAOLOOP		00281	00303 00000 03370		
•	00311				00282	61000 00310		NO HSP OUTPUT
•	00311				00283	65000 06057		OSCRIB
•	00320				00284	00306 00003		
•	00320				00285	00307 65000 02202		
•	00320				00286	00311 61000 003371		
•	00320				00287	61000 00320		

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CAROS	L1	L0	LABEL	TA STATEMENT	LOC	F	JK8	Y	NOTES
	00304			ENT A*L{DOUBLESPI	00312	11010	03744		
	00305			Q*U(TOPORNOT)	00313	10020	03206		
	00306			A00 Q*0*QZERO	00314	26400	00000		
	00307			ENT A*L(TOPOPPAGE)	00315	11010	03743		
	00310			STR A*U(PBUFI	00316	15020	07774		
	00311			RJP TAPEOPEN	00317	65000	03074	C PATCH	
	00312			RJP READTAPE	00320	65000	03074		
	00313			U-TAG DATA+40000*DATA	00321	72640	53000		
	00314			ENT A*W(01	00322	11030	00000		
	00315			SUB A*W(TITLEKEY1*ANOT	00323	21530	04415		
	00316			JP NEWTITLE	00324	61000	00100		
	00317			ENT A*W(01	00325	11030	00000		
	00318			SUB A*W(CSKKEY1*AZERO	00326	21430	04533	NOT OQRS	
	00320			RJL LOOP	00327	61000	03220		
	00321			ENT A*W(COMPAREFTI	00330	11030	04521		
	00322			SUB A*W(TRUE TIME+B31*ANEG	00331	21733	53132		
	00323			JP NOTIO	00332	61000	00452		
	00324			ENT A*W(ANSENNOTM1*AP05	00333	11530	04517		
	00325			JP NOTIO	00334	61000	00452		
	00326			PUT 12000*U(QNSERT1	00335	10000	12000		
	00327			RJP L(INTERCOM1	00336	14020	0034		
	00330			RJP WHATOO	00337	65010	53426		
	00331			NO-JP	00340	65000	00357		
	00332			PUT W(QNSERT1*W(QNSERT1	00341	12000	00000		
	00333			RJP U(INTERCOM1	00342	10030	04516		
	00334			U-TAG TELNONE*0	00343	14030	034		
	00335			RJP WHATOO	00344	65020	53426	FINISHED THIS JJB	
	00336			RJP READTAPE	00345	04534	00000		
	00337			U-TAG DATA+40000*DATA	00346	65000	00357		
	00340			RJP L(INTERCOM1	00347	65000	03014		
	00341			RJP WHATOO	00350	72640	53000		
	00342			ENT A*W(OATA)	00351	65010	53426		
	00343			SUB A*W(TITLEKEY1*AZERO	00352	65000	00357		
	00344			JP SKIPOVER	00353	11030	63000		
	00345			JP NEWTITLE	00354	21430	04415		
	00346			ENT R	00355	61000	00347		
	00347			TERM TAPE* INPUT	00356	03556	61000	00100	
	00350			TERM HSP* OUTPUT	00357	61000	00000		
	00351			PUT 12000*U(GOTHRI1	00360	66640	00000		
	00352			RJP L(INTERCOM1	00361	67140	00000		
	00353			RJP WHATOO	00362	10000	12000		
	00354			NO-JP	00363	14020	03265		
	00355			PUT W(NOGOTHRI1*W(GOTHRI1	00364	03664	65010	53426	
	00356			ENT A*W(HSPOUTPUT1*AZERO	00365	03665	65000	00357	
	00357			JP SKIPPF	00366	12000	00000		
	00360			RJP PFORM	00367	10030	0451	ASK ROY HY	
	00361			S	00374	00005	00002		
	00362			RJP E	00375	65000	02202		
	00363			CL W(NOWWHAT1	00376	16030	00447		

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CAROS	L1	I0	LABEL	TA STATEMENT	LOC
					F JKB Y
*	00365			RJP U(INTERCOM) U-TAG ENT A*(NOWHAT)•AZERO	00377 65020 53426 00400 21047 00443 00401 11410 00447
*	00366			JP TWOORNE	00402 61000 00405
C0367				RJP FINALIZER	00403 65000 00410
*	00370			JP L(PORUN)	00404 61010 00002
*	00371			SUB A*1•AZERO	00405 21400 00001
*	00372			ASKTIMES	00406 61000 00101
C0373				JP SKIPOVER	00407 61000 00347
*	00374			ENTRY PUT W(JUMPBACK)•W(351)	00410 61000 00000
*	00375			EX-FACT TAPE•301000004	00411 10030 00426
*	00376			JP \$ STR TAPE•W(STATI)	00412 14030 00035
C0377				ENT A•W(BCOOUTPUT)•APOS	00413 13670 07477
*				EXIT PUT FMEOFS3L(351)	REW INPUT TAPE W/INT
*	00400			EX-FACT TAPE•1230000010	00414 61000 00414
*	00401			JP \$ STR TAPE•W(STATI)	00415 17670 03323
C0402				EXIT RILJP	00416 11630 03371
*	00403			F0 1•A JUMPBACK	00417 61010 00410
*	00404			-0 \$+1 CHOICEQJES	00420 10000 00424
*	00405			FO 3•TO SYSTEM (01)	00421 14010 00035
*	00406			EX-FACT TAPE•1230000010	00422 13570 07501
*	00407			JP \$ FMEOFS3	00423 51000 00423
C0410				STR TAPE•W(STATI)	00424 17670 03323
*	00411			EXIT RILJP	00425 61010 00410
*	00412			F0 1•A JUMPBACK	00426 60100 00415
*	00413			-0 \$+1 NOWQUES	00427 06050 50505
*	00414			FO 3•TO SYSTEM (01)	00428 77777 00431
C0415				CHOICEQJES	00429 31240 53036
*	00416			2312353105	00430 30311 22205
C0417				5213162112	00431 51244 00505
*	00418			5205516140	00432 23123 53105
*	00419			FO 3• NEW TIMES (21)	00433 52131 52112
*	00420				00434 52055 16140
*	00421				00435 00437 31234
*	00422				00436 05052 31234
*	00423				00437 05052 31234
*	00424				00438 05311 52212
C0425					00439 30055 152210
*	00426				00440 30055 152210
*	00427				00441 77777 77777
*	00428				00442 77777 77777
*	00429				00443 11050 50505
*	00430				00444 00011 00447
*	00431				00445 00000 00000
*	00432				00446 00000 00002
*	00433				00447 00000 00000
*	00434				00448 60100 00023
*	00435				00449 61000 00364
*	00436				00450 61000 00023
*	00437				00451 61000 00023
*	00438				00452 12700 00023
*	00439				00453 10037 02526
*	00440				00454 14037 02592
*	00441				00455 72700 00453
*	00442				00456 12700 00023
*	00443				00457 10037 02552
*	00444				00458 14037 02526
*	00445				00459 72700 00457
*	00446				00460 12700 00023
*	00447				00461 72700 00457
*	00448				00462 12700 00023
*	00449				00463 10037 02576

CAROS		LI IO LABEL	TA STATEMENT	LOC	F	J	K	B	Y	NOTES
				00464	14037	02552				
				00465	72700	00463				
				00466	65000	05621				
				00467	00001	00200				
				00470	65000	02202				
				00471	65000	05557	OBCC			
				00472	00000	02274				
				00473	00200	00001				
				00474	65000	02202				
				00475	61300	00500				
				00476	11430	03370				
				00477	61000	00503	NO HSP	OUTPUT		
				00500	65000	05057	DSCRIB			
				00501	00000	00003				
				00502	65000	02202				
				00503	11430	03371				
				00504	61000	00510	NO BCO	OUTPUT		
				00505	11010	03744				
				00506	15020	07274				
				00507	65000	03473				
				00510	65000	05621	OBLANK			
				00511	00001	00200				
				00512	65000	02202				
				00513	10233	63132	SYSTEM TIME IS NEGATIVE			
				00514	61000	00520				
				00515	10000	32004				
				00516	14010	00575				
				00517	61000	00524				
				00520	14000	00000				
				00521	14033	53132				
				00522	10000	02005				
				00523	14010	00575				
				00524	10033	53132				
				00525	22000	00030	EXTRACT HOURS			
				00526	14030	02204				
				00527	07000	00002	HOURS 830			
				00530	15030	02211				
				00531	11030	02204				
				00532	52030	07502				
				00533	15000	00000				
				00534	22000	00074				
				00535	14030	02204				
				00536	07000	00002	MINS B30			
				00537	15030	02212				
				00540	11030	02204				
				00541	52030	07502				
				00542	15000	00000				
				00543	22000	00074				
				00544	07200	00002				
				00545	20000	00001				
				00546	00074					
				00555	21400	00000				
				00556	61000	00555				

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CAROS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
	00516			STR	A*W1SECS)	00551	15030	02213		
	00517		CHECKMIN	RPL	Y+1*W1MINS)	00552	36030	02212		
	00520			ENT	A*W1MINS)	00553	11030	02212		
	00521			SUB	A*600*ALERO	00554	21400	00074		
	00522			JP	TIMEOK	00555	61000	00560		
	00523			STR	A*W1MINS)	00556	15030	02212		
	00524			RPL	Y+1*W1HOURS)	00557	36030	02211		
	00525		TIMEOK	RJP	PINT	00558	65000	05362		
	00526			O	HOURS	00561	00000	02211		
	00527			2	1	00562	00002	00001		
	00530			RJP	E	00563	65000	02202		
	00531			RJP	PINT	00564	65000	05362	0INT	
	00532			O	MINS	00565	00000	02212		
	00533			2	4	00566	00002	00004		
	00534			RJP	E	00567	65000	02202		
	00535			RJP	PINT	00570	65000	05362	0INT	
	00536			O	SECS	00571	00000	02213		
	00537			2	7	00572	00002	00007		
	00540			RJP	E	00573	65000	02202		
	00541			RJP	PF0	00574	65000	05557		
	00542		FILLCHAR	O		00575	00000	00000		
	00543			1	1	00576	00001	00001		
	00544			RJP	E	00577	65000	02202		
	00545			ENT	Q*W1RA+B3)	00600	10033	53002	RA	
	00546			STR	Q*W1PL6RA)	00601	14030	02576		
	00547			ENT	Q*W1PLORA)	00602	10030	02502	JSE DATA THREE FRAMES 0L0	
	00550			RJP	RB27	00603	65000	01642		
	00551			RJP	PFIX	00604	65000	05476	0FIX	
	00552			O	FX	00605	00000	32217		
	00553			190	100	00606	00023	00012		
	00554			3	4	00607	00003	00004		
	00555			RJP	E	00610	65000	02202		
	00556		NOWOEC	ENT	Q*W1OEC+B3)	00611	10033	53003	0EC	
	00557			STR	Q*W1PL0OEC)	00612	14030	02577		
	00560			ENT	Q*W1PL00EC)	00613	10030	02503		
	00561			RJP	RB27	00614	65000	01642		
	00562			RJP	PFIX	00615	65000	05476	0FIX	
	00563			O	FX	00616	00000	02217		
	00564			190	190	00617	00023	00023		
	00565			3	4	00620	00003	00004		
	00566			RJP	E	00621	65000	02202		
	00567			ENT	A*W1SYSTAT2)*ANEG	00622	11730	53314		
	00570		ISAU	JP	ISERA011	00623	61000	00637		
	00571			PUT	W1RA01US+B3)*W1PL6RA01US)	00624	10033	53006		
	00572			ENT	A*W1PLORA01US)*APOS	00626	11630	02504		
	00573			CP	A*	00627	15040	00000		
	00574			STR	A*W1PLORA01US)	00630	15030	02504		
	00575			RJP	PFIX	00631	65000	05476		
	00576			O	PLORA01US	00632	00000	02504		
	00577			240	280	00633	00030	00034		
	00600			2	80	00634	00002	00010		
	00601			RJP	E	00635	65000	02202		

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CAROS		L1 TO LABEL	TA STATEMENT	LOC	F JKB Y	NOTES
•	00602	ISERA011	JP ARNO PUT W(RAOIUS+B31)*W(PL6RA0IUS)	00636	61000 006446	
•	00603		RJP PFIX 0 PLORA0IUS	00637	10033 53006	
•	00604		220 2B0	00640	14030 02600	
•	00605		3 80	00641	65000 05476	
•	00606		RJP E	00642	00000 02504	
•	00607		PUT W(RAOIUS00T+B31)*W(PL6RA0S0T)	00643	00025 0034	
•	00610		RJP PFIX 0 PLORA0S0T	00644	00003 0010	
•	00611	ARNO	2 5	00645	55000 02202	
•	00612		RJP PFIX 0 PLORA0S0T	00646	10033 53011	
•	00613		240 410	00647	14030 02601	
•	00614		5	00650	65000 05476	
•	00615		RJP E	00651	00000 02505	
•	00616		ENT Q*W(RAO00T+B31)	00652	00030 00051	
•	00617		STR Q*W(PL6RA00T)	00653	00002 00005	
•	00620		ENT Q*W(PLORA00T)	00654	65000 02202	
•	00621		MUL A*TENG#161	00655	10033 53007	RADIANS PER SEC B37
•	00622		STR A*W(TEMP1)	00656	14030 02602	
•	00623		RJP PFIX	00657	10030 02506	
•	00624		0 TEMP	00660	220030 01765	10000B16
•	00625		220 500	00661	15030 02204	
•	00626		2 7	00662	65000 05476	
•	00627		RJP E	00663	00000 02204	
•	00630		ENT Q*W(AZIM+B31)	00664	00026 00062	
•	00631	FORAZIM	STR Q*W(PL6AZ1M1)	00665	00002 00007	
•	00632		ENT Q*W(PL0AZIM1)	00666	65000 02202	
•	00633		RJP RB27	00667	10033 53053	
•	00634		RJP PFIX	00668	00000 02217	
•	00635		0 FX	00669	00023 00075	
•	00636		190 610	00670	14030 02603	
•	00637		3 4	00671	10030 02507	
•	00640		RJP E	00672	65000 01642	
•	00641		ENT Q*W(ELLEV+B31)	00673	65000 05476	
•	00642	FORELEV	STR Q*W(PL6ELLEV1)	00674	00000 02202	
•	00643		ENT Q*W(PL0ELLEV1)	00675	00003 00004	
•	00644		RJP RB27	00676	00003 00004	
•	00645		RJP PFIX	00677	65000 02202	
•	00646		0 FX	00678	10033 53054	
•	00647		190 700	00679	00000 02217	
•	00650		3 4	00680	00000 02217	
•	00651		RJP E	00681	00000 02217	
•	00652		ENT Q*W(CAZ1M+B31)	00682	00000 02202	
•	00653		STR Q*W(PL6CAZIM1)	00683	00033 53060	
•	00654		ENT Q*W(PL0CAZIM1)	00684	00030 02605	
•	00655		RJP RB27	00685	00030 02511	
•	00656		RJP PFIX	00686	65000 01642	
•	00657		0 FX	00687	55000 05476	
•	00660		190 790	00688	00000 02217	
•	00661		3 4	00689	00023 00117	
•	00662		RJP E	00690	00020 00004	
•	00663		ENT A*W(TRLURANGE+B31)	00691	00721 55000 02202	
•	00664		ENT A*W(TRLURANGE+B31)	00692	11033 53063	

\*\*\*\*\* PRINTOUT \*\*\*\*\* SPURT OUTPUT NO. 210  
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CAROS	L1	I0	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	00665			STR A*W(PLOTURNG)	00723	15030	02606		
	00666			ENT A*W(PLOTURNG)	00724	11030	02512		
	00667			STR A*W(ROPR)*APOS	00725	15630	04546	FOR R0C0N9 SR	
	00670			CP A*	00726	15040	00000		
	00671			STR A*W(PLOTURNG)	00727	15030	02512		
	00672			ENT A*W(SYSTAT2)*ANEG	00730	11730	63314		
	00673			JP POSRNG	00731	61000	00740		
	00674			RJP PFIX	00732	65000	05476	0F1X	
	00675			O PLOTURNG	00733	00000	02512		
	00676			00676 240 880	00734	00030	00130		
	00677			2 80	00735	00002	00010		
	00700			RJP E	00736	65000	02202		
	00701			00701 POSRNG	00737	61000	00745		
	00702			RJP PFIX	00740	65000	05476	0F1X	
	00703			O PLOTURNG	00741	00000	02512		
	00704			00704 220 0	00742	00024	00000		
	00705			3 7	00743	00003	00007		
	00706			RJP E	00744	65000	02202		
	00707			00707 NOWRAHH	00745				
	00710			RJP RAINHH	00746	65000	04301	IHH MM SS.XX FORMAT	
	00711			ENT A*1000	00747	11000	01444		
	00712			RJP PORA	00750	55000	01647		
	00713			ENT Q*W(PLOOEC)	00751	10030	02503		
	00714			RJP OECINOMS	00752	65000	04240		
	00715			ENT A*1120	00753	11000	00160		
	00716			RJP P00EC	00754	65000	01716		
	00717			JP \$+3*KEY3	00755	61300	00767		
	00720			ENT A*W(HSPOUTPUT)*AZERO	00756	11430	03370		
	00721			JP \$+4	00757	61000	00763	NO HSP OUTPUT	
	00722			RJP PSCRIB	00760	65000	06057	OSCRIB	
	00723			O 1	00761	00000	00001		
	00724			RJP E	00762	65000	02202		
	00725			ENT A*W(BCD0UTPUT)*AZERO	00763	11430	03371		
	00726			JP \$+4	00764	61000	00770	NO BCO OUTPUT	
	00727			ENT A*L(SINGLESP)	00765	11010	03745		
	00730			STR A*U(PBUF)	00766	15020	017274		
	00731			RJP TAPE0PUT	00767	65000	03473		
	00732			RJP PBLANK	00770	55000	05621	OBLANK	
	00733			1 1280	00771	00001	00200		
	00734			RJP E	00772	65000	02202		
	00735			RJP PFO	00773	65000	05557	OBCC	
	00736			0 T2	00774	00000	02326		
	00737			1280 1	00775	00200	00001		
	00740			RJP E	00776	65000	02202		
	00741			JP \$+3*KEY3	00777	61300	01002		
	00742			ENT A*W(HSPOUTPUT)*AZERO	01001	61000	01005	NO HSP OUTPUT	
	00743			JP \$+4	01002	65000	05057	OSCRIB	
	00745			RJP PSCRIB	01003	00000	00002		
	00746			O 2	01004	65000	02202		
	00747			RJP E	01005	11430	03371		
	00750			ENT A*W(BCD0UTPUT)*AZERO	01006	61000	01012	NO BCD OUTPT	
	00751			JP \$+4	01007	11010	03744		
				ENT A*L(DOUBLESP)					

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PRINTOUT		TA STATEMENT	LOC	F	JKB	Y	NOTES
CARD	LI TO LABEL						
	00752	STR A*UIPBUF1	01010	15020	07274		
•	00753	RJP TAPEOUTPUT	01011	65000	03473		
•	00754	RJP PBLANK	01012	65000	05621	OBLANK	
•	00755	1 1280	01013	00001	00200		
•	00756	RJP E	01014	65000	02202		
•	00757	ENT Q*WISRA+B31	01015	10033	53004		
•	00760	STR Q*WIPL6SRA1	01016	14030	02607		
•	00761	ENT Q*WIPLOSSRA1	01017	10030	02513		
•	00762	RJP RB27	01020	65000	01642		
•	00763	RJP PFIX	01021	65000	05476	0 FIX	
•	00764	0 FX	01022	00000	02217		
•	00765	190 100	01023	00023	00012		
•	00766	3 4	01024	00003	00004		
•	00767	RJP E	01025	65000	02202		
•	00770	ENT Q*WISOEC+B31	01026	10033	53005		
•	00771	STR Q*WIPL6SOEC1	01027	14030	02610		
•	00772	ENT Q*WIPLOSSOEC1	01030	10030	02514		
•	00773	RJP RB27	01031	65000	01642		
•	00774	RJP PFIX	01032	65000	05476	0 FIX	
•	00775	0 FX	01033	00000	02217		
•	00776	190 190	01034	00023	00023		
•	00777	3 4	01035	00003	00004		
C1000	C1000	RJP E	01036	65000	02202		
C1001	C1001	PUT W(CRANGE+B31)*W(PL6CRANGE1)	01037	10033	53057		
C1002	C1002	RJP PINT	01040	14030	02611		
C1003	C1003	0 PL0CRANGE	01041	65000	05362		
C1004	C1004	80 280	01042	00000	02515		
C1005	C1005	RJP E	01043	00010	00034		
C1006	C1006	PUT W(IRANGE00T+B31)*W(PL0RNG00T)	01044	65000	02202		
C1007	C1007	RJP PFIX	01045	10033	53062		
01010	01010	0 PL0RNG00T	01046	14030	02612		
C1011	C1011	240 370	01047	65000	05476		
C1012	C1012	2 5	01050	00000	02516		
C1013	C1013	RJP E	01051	00030	00045		
01014	01014	ENT Q*WIEC00T+B31	01052	00002	00005		
01015	01015	STR Q*WIPL60EC00T1	01053	65000	02202		
01016	01016	ENT Q*WIPLO0EC00T1	01054	10033	53010	RAO B37	
01017	01017	MUL W(TENG8161	01055	14030	02513		
01020	01020	STR A*W(TEMP1	01056	10036	02517		
C1021	C1021	RJP PFIX	01057	22030	01765	100000B16	
01022	01022	0 TEMP	01060	15030	02204		
01023	01023	220 460	01061	65000	02204		
01024	01024	2 7	01062	00000	02204		
01025	01025	RJP E	01063	00025	00026		
01026	01026	Q*WISAZIM+B31	01064	00002	00007		
01027	01027	STR Q*WIPL6SAZIM1	01065	65000	02204		
01030	01030	ENT Q*WIPLOSSAZIM1	01066	10033	53055		
01031	01031	RJP RB27	01067	14030	02614		
01032	01032	RJP PFIX	01070	10030	02520		
C1033	C1033	0 FX	01071	65000	01642		
C1034	C1034	190 0	01072	65000	05476	0 FIX	
			01073	00000	02217		
			01074	00023	00000		

\*\*\*\*\* PRINTOUT \*\*\*\*\*

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CAROS	L1 L0 LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	C1035	3 4	01075	00003	0004		
	01036	RJP E	01076	65000	02202		
	01037	Q*W(SELEV+B3)	01077	10033	63056		
	01040	STR Q*W(PL6SELEV)	01100	14030	02615		
	C1041	ENT Q*W(PLOSELEV)	01101	10030	02521		
	01042	RJP RB27	01102	65000	01642		
	01043	RJP PF1X	01103	65000	05476		
	01044	0 FX	01104	00000	02217		
	C1045	190 0	01105	00003	00000		
	01046	3 4	01106	00003	0004		
	01047	RJP E	01107	65000	02202		
	01050	Q*W(ICELEV+B3)	01111	10033	63061		
	C1051	STR Q*W(PL6CELEV)	01111	14030	02616		
	01052	ENT Q*W(PLOCLEV)	01112	10030	02522		
	01053	RJP RB27	01113	65000	01642		
	01054	RJP PF1X	01114	65000	05476		
	01055	0 FX	01115	00000	02217		
	01056	190 0	01116	00023	00000		
	C1057	3 4	01117	00003	00004		
	01060	RJP E	01120	65000	02202		
	C1061	ENT Q*W(S10ERTIME+B3)	01121	10033	63012		
	01062	STR Q*W(PL6S0RTIME)	01122	14030	02617		
	01063	ENT Q*W(PLOSSORTIME)	01123	10030	02523		
	01064	STR Q*W(ROPS)	01124	14030	04547		
	C1065	WUL (RA00EC)	01125	22030	02065		
	01066	STR A*W(TEMP)	01126	15030	02204		
	01067	RJP PF1X	01127	65000	05476		
	01070	0 TEMP	01130	00000	02204		
	C1071	190 0	01131	00023	00000		
	C1072	3 4	01132	00003	00004		
	01073	RJP E	01133	65000	02202		
	01074	JP \$+3*KEY3	01134	61300	01137		
	C1075	ENT A*W(HSPOUTPUT)*AZERO	01135	1430	03370		
	01076	JP \$+4	01136	61000	01142		
	01077	RJP PSCR1B	01137	65000	06057		
	01100	0 1	01140	00000	00001		
	C1101	ENT A*W(BC0OUTPUT)*AZERO	01141	65000	02202		
	01102	JP \$+4	01142	1430	03371		
	01103	ENT A*L(SINGLES)	01143	61000	01147		
	01104	STR A*U(PBUF)	01144	11010	03745		
	01105	RJP TAPEOUT	01145	15020	07274		
	01106	ENT A*W(SIMSWITCH)*ANOT	01146	65000	03473		
	01107	JP MORESTUFF	01147	11530	02026		
	01110	RJP LI(INTERCOM)	01150	61000	01154		
	01111	RJP WHATOO	01151	65010	53426		
	01112	RJP BASICLOOP	01152	65000	00357		
	01113	RJP PBLANK	01153	61000	00236		
	01114	MORESTUFF	01154	65000	05621		
	C1115	1 1280	01155	00001	00200		
	01116	RJP PFO	01156	65000	02202		
	01117	RJP LARELA	01157	65000	05557		
	01120	0 LARELA	01160	00000	04341		
	C1121	1100 1	01161	00156	00001		

CAROS		LI ID	LABEL	TA STATEMENT	PRINTOUT	SPURT	OUTPUT NO. 210	LOC	F	J	K	B	Y	NOTES
		C1122		RJP E			01162	65000	02202					
		01123		JP \$+3*KEY3			01163	61300	01166					
		C1124		ENT A*W(HSPOUTPUT)*AZERO			01164	11430	03370					
		01125		JP \$+4			01165	61000	01171	NO HSP	OUTPUT			
		01126		RJP PSCRIB			01166	65000	06057					
		01127		JP S			01167	00000	00005					
		C1130		RJP E			01170	65000	02202					
		01131		ENT A*W(BCCOUTPUT)*AZERO			01171	11430	03371					
		01132		JP \$+4			01172	61000	01176	NO BCO	OUTPUT			
		01133		ENT A*L(00UUBLESP)			01173	11010	03744					
		C1134		STR A*U(PBUFI			01174	15020	07274					
		01135		TAPEOUTPUT			01175	65000	03473					
		C1136		RJP PFO			01176	65000	05557					
		01137		O LABELB			01177	00000	04367					
		C1140		1100 1			01200	00156	00001					
		01141		RJP E			01201	65000	02202					
		01142		JP \$+3*KEY3			01202	61300	01205					
		01143		ENT A*W(HSPOUTPUT)*AZERO			01203	11430	03370					
		C1144		JP \$+4			01204	61000	01210	NO HSP	OUTPUT			
		01145		RJP PSCRIB			01205	65000	05057					
		01146		O			01206	00000	00001					
		01147		RJP E			01207	65000	02202					
		C1150		ENT A*W(BCCOUTPUT)*AZERO			01210	11430	03371					
		01151		JP \$+4			01211	61000	01215					
		C1152		ENT A*L(SINGLESP1			01212	11010	0345					
		01153		STR A*U(PBUFI			01213	15020	07274					
		C1154		TAPEOUTPUT			01214	65000	03473					
		01155		RJP PBLANK			01215	65000	05621					
		C1156		1280			01216	00001	00200					
		01157		RJP E			01217	65000	02202					
		01160		CL W(TIME1)			01220	16030	02220					
		01161		CL B1*			01221	12100	00000					
		01162		CL B2*			01222	12200	00000					
		C1163		RJP PFIX			01223	65000	05476	0 FIX				
		01164		O TIME			01224	00000	02220					
		01165		280 1			01225	00034	00001					
		C1166		1 3			01226	00001	00003					
		01167		RJP E			01227	55000	02202					
		C1170		PUT W(TIME1)*W(RPG)			01230	10030	02220	FOR ROCONV				
							01231	14030	04550					
							01232	11031	75000					
							01233	65000	01632					
							01234	15030	04544					
							01235	15000	00000					
							01236	22000	00550					
							01237	14030	02204					
							01240	65000	05476					
							01241	00000	02204					
							01242	00023	00007					
							01243	00003	00004					
							01244	65000	02202					
							01245	11730	01641					
							01246	61000	01253					
							01205							

..... PRINTOUT ..... SPURT OUTPUT NO. 210  
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CARDS	LI	IO	LABEL	TA	STATEMENT	LOC	F	J	K	R	Y	NOTES
	01206			RJP	PFO	01247	65000	05557				
	C1207			0	ASTARR	01250	00000	04541				
	01210			1	7	01251	00001	00007				
	01211		FORELIN	RJP	E	01252	65000	02202				
	01212			ENT	A*WIELEVIN+B11	01253	11031	76000				
	C1213			SEL	CL*7776000000	01254	52030	07503				
	01214			STR	A*WIRROPE1	01255	15030	34545				
	01215			STR	A*Q	01256	15000	00000				
	01216			MUL	3600	01257	22000	00550				
	C1217			STR	Q*WHITEMP1	01260	14030	02204				
	01220			RJP	PFIX	01261	65000	05476	OFIX			
	01221			0	TEMP	01262	00000	02204				
	01222			190	160	01263	00023	00020				
	C1223			3	4	01264	00003	00004				
	01224			RJP	E	01265	65000	02202				
	01225		FORAZOUT	ENT	A*WIAZIMOUT+B11	01266	11031	54000				
	C1226			RJP	CHKV LAP	01267	65000	01632				
	C1227			STR	A*WIFORROPA1	01270	15030	01766				
	01230			STR	A*Q	01271	15000	00000				
	01231			MUL	3600	01272	22000	00550				
	01232			STR	Q*WHITEMP1	01273	14030	02204				
	C1233			RJP	PFIX	01274	65000	05476				
	C1234			0	TEMP	01275	00000	02204				
	01235			190	250	01276	00023	00031				
	01236			5	4	01277	00003	00004				
	C1237			RJP	E	01300	65000	02202				
	01240			ENT	A*WIKOVRLAP1*ANEG	01301	11730	01641				
	01241			JP	FORELOUT	01302	61000	01307				
	01242			RJP	PFO	01303	65000	05557				
	C1243			0	ASTARR	01304	00000	04541				
	01244			1	250	01305	00001	00031				
	01245			RJP	E	01306	65000	02202				
	01246		FORELOUT	ENT	A*WIELEVOUT+B11	01307	11031	55000				
	C1247			SEL	CL*7776000000	01310	52030	07503				
	01250			STR	A*WIFORROPE1	01311	15030					
	01251			STR	A*Q	01312	15000	00000				
	01252			MUL	3600	01313	22000	00550				
	C1253			STR	Q*WHITEMP1	01314	14030	02204				
	01254			RJP	PFIX	01315	65000	05476	OFIX			
	01255			0	TEMP	01316	00000	02204				
	01256			190	340	01317	00023	00042				
	C1257			3	4	01320	00003	00004				
	C1260			RJP	E	01321	65000	02202				
	01261			ROCONV		01322	65000	04542				
	01262			ENT	Q*WIRROUT1	01323	10030	05066				
	C1263			RJNP	RJNP	01324	65000	04301	CONVERT TO HH MM SS.XX FORMAT			
	01264			ENT	A*430	01325	11000	00053	OUTPUT HH START AT COL 43 34			
	01265			RJP	PORA	01326	65000	01647				
	01266			ENT	Q*WIECOUT1	01327	10030	05065				
	C1267			RJP	OECINOMS	01330	65000	04240				
	01270			ENT	A*550	01331	11000	00067				
	01271			RJP	PODEC	01332	65000	01716				
	01272			MOVE	2*FORROPA*ROPPA	01333	10030	01766				

CARDS		LI ID LABEL	TA STATEMENT	SPURT OUTPUT NO. 210 J00*1/22/65	LOC	F JKB Y	NOTES
			PRINTOUT				
C1273		RJP	ROCONV	01334	14030 04544		
01274		ENT	Q*WIRAOOUT)	01335	10030 01767		
01275		RJP	RAINHH	01336	14030 04545		
01276		ENT	A*680	01337	65000 04542		
01277		RJP	PORA	01340	10030 05066		
01300		ENT	Q*WIOECOUT)	01341	65000 34301		
01301		RJP	DECINMS	01342	11000 00104		
01302		ENT	A*800	01343	65000 01647		
01303		RJP	PODEC	01344	10030 05065		
01304		ENT	Q*WLOOPOUT+B1)	01345	65000 04240		
01305		ENT	Q*WLOOPOUT+B1)	01346	11000 00120		
01306		SUB	Q*7500000	01347	65000 01716		
01307		RJP	Q*WFOROOP)	01348	10031 56000		
01310		RJP	PINT	01349	27030 07504		
01311		O	FOROOP	01350	01352 14030 02214		
01312		0	930	01353	65000 05262		
01315		RJP	E	01354	00000 02214		
01316		RJP	E	01355	00011 00135		
01317		O	1	01356	65000 02202		
01320		RJP	E	01357	61300 01362		
01321		ENT	A*W(HSPOUTPUT)*AZERO	01358	01360 03370		
01322		JP	\$+4	01359	61000 01365		
C1323		ENT	A*LISINGLESP)	01360	NO HSP OUTPUT		
01324		STR	A*UPBUFI	01361	65000 06057		
01325		RJP	TAPEOUP	01362	00000 00001		
01326		RJP	LINTERCOM)	01363	01364 65000 02202		
C1327		RJP	WHATOO	01365	11430 03371		
01330		ENT	B1*B1+0	01366	61000 01372		
01331		ENT	Q*WOLETIME)	01367	11010 03745		
01332		MUL	0	01368	01370 15020 07274		
C1333		RPL	Y+Q*WTIME)	01369	65000 03473		
C1334		BSK	B2*L(NOPTS)	01370	01372 65010 53426		
01335		JP	LOOPX	01371	01373 65000 00357		
01336		JP	BASICLOOP	01372	12101 00000		
C1337	IS10	ENTRY		01373	01374 10030 02216		
01340		CL	W(BRANONEW)	01375	22000 00000		
01341		PUT	12000*W(OAMIC)	01376	01377 34030 02220		
C1342	WXLOOPX	RJP	L(INTERCOM)	01400	01401 71210 02215		
01343		RJP	WHATOO	01402	61000 01223		
01344	OAMIC	NO-OP	PUT W(INSERTX)*W(OAMIC)	01403	01403 61000 00000		
01345		PUT	W(BRANONEW)	01404	01404 16030 02025		
01346		ENT	Q*L(INBUFFER)	01405	10000 12000		
C1347		STR	Q*LS\$+1)	01406	14020 01411		
01350		ENT	Q*L(0)	01407	14010 52426		
C1351		STR	Q*LMOVER+11	01410	65000 03357		
01352		A00	Q*200	01411	12000 00000		
				01412	01412 10030 02622		
				01413	14030 01411		
				01414	14010 03101		
				01415	14010 01416		
				01416	10010 00000		
				01417	14010 01430		
				01420	26000 00024		

SPURT OUTPUT NO. 210  
JOO•1/22/65

CARD	LI	10	LABEL	TA	STATEMENT	LOC	F	JK8	Y	NOTES
	01353			STR	Q•L•PICKPGM	01421	14010	01477		
•	01354			ENT	B7•0ELTA0	01422	12700	06000		
•	01355			STR	Q•L(\$+1	01423	14010	01424		
•	01356			ENT	A•M(01	01424	11030	00000		
•	01357			STR	A•W(SYSTAT21	01425	15030	53314		
•	01360			STR	A•W(SYSTAT2•871	01426	15037	53314		
•	01361	MOVER		MOVE	240•DATA•HEAO	01427	12700	00027		
						01430	10037	63000		
						01431	14037	02070		
						01432	72700	01430		
	01362			RJP	PFO	01433	65000	05557	08CC	
•	01363			0	HEAO•2	01434	00000	02072		
•	01364			B00	1	01435	00120	00001		
•	01365			RJP	E	01436	65000	02202		
•	01366			ENT	Q•L(HEAO+190)	01437	10010	02113		
•	01367			CL	A•	01440	11000	00000		
•	01368			OIV	7	01441	23000	00007		
•	01370			LSH	A•1	01442	06000	00001		
•	01371			ENT	B1•A	01443	12170	00000		
•	01372			RJP	PFO	01444	65000	05557	08CC	
•	01373			I	OAYS	01445	00001	02161		
•	01374			100	B10	01446	00012	00121		
•	01375			RJP	E	01447	65000	02202		
•	01376			1	MONTH	01450	11010	02112		
•	01377			ENT	A•L(HEAO+180)	01451	06000	00001	2M-1	
•	01400			LSH	A•1	01452	12170	00000		
•	C1401			ENT	B1•A	01453	65000	05557	08CC	
•	01402			RJP	PFO	01454	00001	02127		
•	01403			1	MONTH	01455	00012	00132		
•	01404			100	900	01456	65000	02202		
•	C1405			RJP	E	01457	10020	02112		
•	01406			PUT	U•HEAO+1801•L(YEAR)	01460	14010	02177		
•	01407			PUT	U•HEAO+1901•L(DAYNO)	01461	10020	02113		
				RJP	PINT	01462	14010	02200	0INT	
	01410			O	DAYNO	01463	65000	05362		
•	01411			2	1000	01464	00000	02200		
•	01412			RJP	E	01465	00002	00144		
•	C1413			RJP	PFO	01466	65000	02202		
•	01414			O	COMM	01467	65000	05557	08CC	
•	01415			0	1030	01470	00000	02201		
•	01416			RJP	E	01471	00001	00147		
•	C1417			RJP	E	01472	65000	02202		
•	01420			PINT		01473	65000	05362	0INT	
•	01421			YEAR		01474	00000	02177		
•	01422			4	1040	01475	00004	00150		
•	C1423			RJP	E	01476	65000	02202		
•	01424	PICKPGM		ENT	A•L(01	01477	11010	00000		
•	01425			SUB	A•1	01500	21000	0C001		
•	01426			STR	A•L(TEMP1	01501	15010	02204		
•	C1427			SUB	A•5•ANOT	01502	21500	00005		
•	01430			JP	TALKHENRY	01503	61000	01521		
•	01431			ENT	A•L(TEMP1	01504	11010	02204		
•	01432			SUB	A•4•ANOT	01505	21500	00004		

\*\*\*\*\* PRINTOUT \*\*\*\*\*

SPURT OUTPUT NO. 210

J00\* 1/22/65

CARD	L1 TO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	C1433	JP TALKHENRY	01506	61000	01521		
	01434	ENT A*(TEMP1	01507	11010	02204		
	01435	LSH A* 1	01510	06000	00001		
	01436	A00 A*(TEMP)	01511	00010	02204		
	C1437	A00 A*PGMTABLE	01512	20000	01577		
	C1440	STR A*(WHICHCPGM1	01513	15010	01515		
	C1441	RJP PFO	01514	65000	05557		
	01442	WHICHCPGM	01515	00000	00000		
	C1443	150 1120	01516	00017	00160		
	01444	RJP E	01517	65000	02202		
	01445	JP ARNOHEAD	01520	61000	01525		
	01446	RJP PFO	01521	65000	05557		
	C1447	0 HEAO+210	01522	00000	02115		
	C1450	150 1120	01523	00017	00160		
	01451	RJP E	01524	65000	02202		
	01452	ARNOHEAD	01525	10000	51000		
	01453	RJP PSCRIB	01526	14020	06123		
	01454	0	01527	65000	06057		
	01455	RJP E	01530	00000	00001		
	C1456	PUT U(PACKBUFF1*L(ARN0HENRY+1)	01531	65000	02202		
			01532	10020	07205		
			01533	14010	01537		
	01457	PUT 12000*U(PSCRIBSW)	01534	10000	12000		
	C1460	MOVE 260*MYOUT*MYHEAD	01535	14020	06123		
			01536	12700	00031		
			01537	10037	02406		
	C1461	ENT A*(HEAO+21*ANOT	01540	14037	02242		
	C1462	JP WISEGUY	01541	72700	01537		
	01463	CL 85*	01542	11530	02072		
	01464	MORELOOK	01543	61000	01564		
	C1465	ENT A*(HEAO+24851*AZERO	01544	12500	00000		
	01466	JP NOTZERO	01545	11435	02072		
	01467	STR B0*CPW(HEAO+24851)	01546	61000	01551		
	01470	JP GETOUT	01547	16075	02072		
	C1471	BSK R5*150	01550	61000	01554		
		JP MORELOOK	01551	71500	00017		
	01472	STR B0*CPW(HEAO+1801	01552	61000	01545		
	01473	JP ADJUSTBUFRKEY1	01553	16070	02112		
	01474	U(INTERCOMI	01554	61100	01561		
	C1475	ANTITLE*0	01555	65020	53426		
	01476	U-TAG U(INTERCOMI	01556	04115	00000		
	01477	PRINTITLE*0	01557	65020	53426		
	01500	ENT A* 1	01558	04424	00000		
	C1501	RSE CP(LMSWITCH1	01559	11000	00001		
	C1502	EXIT	01560	01562	55010	02221	
	01503	MOVE 160*MUTE*MYHEAD	01563	61010	01403		
			01564	12700	00017		
			01565	10037	04426		
	01504	RJP U(INTERCOM1	01566	14037	02242		
	01505	U-TAG ANNTITLE*0	01567	72700	01565		
	C1506	RJP U(INTERCOM1	01570	55020	53426		
			01571	04416	00000		
			01572	65020	53426		
							SAY TITLE FOLLOWS PRINT THE TITLE

SPURT OUTPUT NO. 210  
J00\*1/22/65

CAROS	L1	I0	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
	*	01507		U-TAG	BEEHAQE0*0	01573	04460	00000		
	*	01510		JP	ADJUSTBUF W(COMPAREST)	01574	01000	01561		
	*	01511	STRNOW	CL		01575	16030	04520		
	*	01512		JP	CHICKENTM	01576	01000	00136		
	*	01513	PGMTABLE	F0	3*BELT SYSTEM	01577	07122	13105		
	*	01514		F0	3*SATELLITE SYSTEM	01600	30363	03112		
	*	01515		F0	3*FIXED AZIM-ELEV	01601	22050	50505		
	*	01516		F0	3*SUN SYSTEM	01602	30063	11221		
	*	01517		F0	3*STAR SYSTEM	01603	21163	11205		
	*	01520		F0	3*PLANET SYSTEM	01604	30363	03122		
	*	01521		F0	3*MOON SYSTEM	01605	13163	51211		
	*	01522		F0	3*FIXED R.A.-DEC	01606	05063	71622		
	*	01523	STAYLATE	PUT	W(MAXETIME)W(COMPARET)	01607	41122	11233		
	*	01524		JP	LETS GO	01610	30322	30530		
	*	01525	CHKVLAP	ENTRY		01611	36103	11222		
	*	01526		CL	W(KOVR LAP)	01612	05050	50505		
	*	01527		LSH	A*100*APOS	01613	30310	62705		
	*	01530		STR	BO*CPW(KOVR LAP)	01614	30363	03112		
	*	01531		SEL	CL*4000000000	01615	22050	50505		
	*	01532		RSH	A*100	01616	25210	62312		
	*	01533	COVR LAP	JP	LETS GO	01617	31053	03630		
	*	01535	RB27	ENTRY		01620	31122	20505		
	*	01536		0		01621	22242	42305		
	*	01537		MUL	W(0360B201	01622	30363	03112		
	*	01540		LSH	AQ*2	01623	22050	50505		
	*	01541		STR	A*W(FX1)	01624	61000	00000		
	*	01542	PORA	EXIT		01625	05277	50675		
	*	01543		STR	A*L(BASICCOLRA)	01626	41111	21005		
	*	01544		STR	A*L(HHCOL)	01627	10030	04522		
	*	01545		STR	A*L(S1GCOL1)	01630				
	*	01546		A00	A*3	01633	06600	00012		
	*	01547		STR	A*L(MMCOL1)	01634	06635	01641		
	*	01550		A00	A*3	01635	32030	07505	CLEAR OVERLAP BIT	
	*	01551		STR	A*L(SSCOL1)	01637	02000	00012		
	*					01640	01010	01632		
	*					01641	00000	00000		
	*					01642	61000	00000		
	*					01643	22030	02064		
	*					01644	07000	00002	DEGREES B19	
	*					01645	15030	02217		
	*					01646	61010	01642		
	*					01647	51000	00000	OUTPUT RA IN HH M SS.XX FORMAT	
	*					01650	15010	01715		
	*					01651	15010	01664		
	*					01652	15010	01672		
	*					01653	20000	00003		
	*					01654	15010	01676		
	*					01655	20000	00003		
	*					01656	15010	01702		

SPURT OUTPUT NO. 210  
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CAROS	LI	IO	LABEL	TA	STATEMENT	PRINTOUT	SPURT OUTPUT NO. 210	LOC	F	J	K	B	Y	NOTES
			01552	A00	A*3			01657	20000	00003				
			01553	STR	A*(SSXXXCOL)			01660	15010	01706				
			01554	STR	A*LIPTCOL1			01661	15010	01712				
			01555	RJP	PINT			01662	65000	05362				
			01556	O	RAHH			01663	00000	04335				
			01557	HHCOL	2 O			01664	00002	00000				
			01560	RJP	E			01665	65000	02202				
			01561	ENT	A*W(RASIGN)*ANEG			01666	11730	04334				
			01562	JP	RAPLUS			01667	61000	01674				
			01563	RJP	PFO			01670	65000	05557				
			01564	O	NEGSIGN			01671	00000	04277				
			01565	SIGNCOL	1 O			01672	00001	00000				
			01566	RJP	E			01673	65000	02202				
			01567	RAPLUS	RJP PINT			01674	65000	05362				
			01570	O	RAMM			01675	00000	04336				
			01571	HMCOL	2 O			01676	00002	00000				
			01572	RJP	PINT			01677	65000	02202				
			01573	O	RASSXX			01700	65000	05362				
			01574	RASS	2 O			01701	00000	04337				
			01575	SSCOL	O			01702	00002	00000				
			01576	RJP	E			01703	65000	02202				
			01577	RJP	PINT			01704	65000	05362				
			01600	O	RASSXX			01705	00000	04340				
			01601	SSXXXCOL	2 O			01706	00002	00000				
			01602	O	RASS			01707	65000	02202				
			01603	RJP	PFO			01710	65000	05557				
			01604	O	OECPOINT			01711	00000	04300				
			01605	PTCOL	1 O			01712	00001	00000				
			01606	RJP	E			01713	65000	02202				
			01607	EXIT				01714	61010	01647				
			01610	BASICCOLRA	O			01715	00000	00000				
			01611	P00EC	ENTRY			01716	61000	00000	OUTPUT OEC IN	00	MM SS.X F324	
			01612	STR	A*L(BASICCOL)			01717	15010	01764				
			01613	STR	A*LI0COL1			01720	15010	01733				
			C1614	STR	A*LSGNCOL			01721	15010	01741				
			01615	A00	A*4			01722	20000	00004				
			01616	STR	A*LI0MINCOL			01723	15010	01745				
			01617	A00	A*3			01724	20000	00003				
			01620	STR	A*LI0SECCOL			01725	15010	01751				
			01621	A00	A*3			01726	20000	00003				
			01622	STR	A*LI0SSXXXCOL			01727	15010	01755				
			01623	RJP	E			01730	15010	01761				
			01624	O	OECOEG			01731	65000	05362				
			01625	O	OECOEG			01732	00000	04273				
			01626	ODCOL	3 O			01733	00003	00000				
			01627	RJP	E			01734	65000	02202				
			01630	ENT	A*W(OECSIGN)*ANEG			01735	11730	04271				
			01631	JP	OECPLUS			01736	61000	01743				
			01632	RJP	PFO			01737	65000	05557				
			01633	O	NEGSIGN			01740	00000	04277				
			01634	SGNCOL	1 O			01741	00001	00000				
			01635	RJP	E			01742	65000	02202				



SPURT OUTPUT NO. 210  
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CAROS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
	01702	SIMSWITCH	0			02026	00000	00000		
	C1703	TITLECNT	0			02027	00000	00000		
	01704	ASKHR	FO	1*A		02030	06050	50505		
	01705		-0	\$+1		02031	77777	02032		
	01706		FO	0*START GMT HH		02032	30310	52731		
	C1707		-0			02033	05142	23105		
	01710	TELLHR	FO	1*0		02034	15150	50505		
	C1711		11	STHR		02035	77777	77777		
	01712		0	0		02036	11050	50505		
	01713		0	480		02040	00000	00000		
	01714	ASKMIN	FO	1*A		02041	00000	00060		
	C1715		-0	\$+1		02042	06050	50505		
	01716		FO	0*MM		02043	77777	02044		
	01717	TELLMIN	FO	1*0		02044	22220	50505		
	01720		11	STMM		02045	11050	50505		
	C1721		0	0		02046	00011	02061		
	01722		0	590		02047	00000	00000		
	01723	ASKSEC	FO	1*A		02050	00000	00073		
	01724		-0	\$+1		02051	06050	50505		
	C1725		FO	0*SS		02052	77777	02053		
	01726	TELLSEC	FO	1*0		02053	30300	50505		
	C1727		11	STSS		02054	11050	50505		
	C1730		0	0		02055	00011	02062		
	C1731		0	590		02056	00000	00000		
	01732	STHR	0			02057	00000	00073		
	01733	STMM	0			02060	00000	00000		
	01734	STSS	0			02061	00000	00000		
	C1735	TTG	0			02062	00000	00000		
	01736	0360820	2640000000			02063	00000	00000		
	C1737	RA00EC	3451356036			02064	26400	00000	DEC	360.820
	01740	INSERTA	JP	WLOOP		02065	34513	56036		57.29578H23
	01741	HOMWANY	0	2500		02066	610000	00044		
	01742	HEAD	RESERVE	300		02067	00000	00372		
	01743	HEADKEY	0			02070	00000	00000		
	C1744	MONTH	0			02126	00000	00000		
	C1745		0			02127	00000	00000		
	01746		FO	2* JANUARY		02130	00000	00000		
	01747		FO	2* FEBRUARY		02131	05050	51706		
	01750		FO	2* MARCH		02133	05051	51207		
	01751		FO	2* APRIL		02134	27320	52736		
	C1752		FO	2* MAY		02135	05050	50505		
	01753		FO	2* JUNE		02136	22062	71015		
	01754		FO	2* JULY		02137	05050	50505		
	01755		FO	2* AUGUST		02140	06252	71621		
						02141	05050	50505		
						02142	05052	20636		
						02143	05050	50505		
						02144	17322	31205		
						02145	05050	50505		
						02146	05173	22136		
						02147	05050	50505		

SPURT OUTPUT NO. 210  
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CARD#	L1	I0	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	01756			FD	2* SEPTEMBER	02150	32143	23031		
.	01757			FD	2* OCTOBER	02151	05301	22531		
.	C1760			FD	2* NOVEMBER	02152	12220	71227		
.	01761			FD	2* DECEMBER	02153	05050	52410		
.	01762	0AYS		FD	2* THURSDAY	02154	31240	71227		
.	01763			FD	2*FRIDAY	02155	05052	32433		
.	01764			FD	2* SATURDAY	02156	12220	71227		
.	01765			FD	2* SUNDAY	02157	05051	11210		
.	01766			FD	2*MONDAY	02160	12220	71227		
.	01767			FD	2*TUESDAY	02161	31153	22730		
.	01770			FD	2*WEDNESDAY	02162	11063	50505		
.	01771	YEAR		0		02163	13271	51106		
.	01772	DAYNO		0		02164	36050	50505		
.	01773	COMMA		56000	0	02165	30063	13227		
.	01774	E		ENTRY		02166	11063	50505		
.	01775			JP	L(E)*STOP	02167	30322	31106		
.	01776	TEMP		RESERVE	5	02170	36050	50505		
.	C1777	HOURS		0		02171	22242	31106		
.	C2000	MINS		0		02172	36050	50505		
.	C2001	SECS		0		02173	31321	23011		
.	02002	FOROP		0		02174	08360	50505		
.	C2003	NOPTS		000406115		02175	34121	12312		
.	C2004	DELTIME				02176	30110	53605		
.	02005	FX		0		02177	00000	00000		
.	C2006	TIME		0		02200	00000	00000		
.	02007	MSWITCH		0		02201	56000	00000		
.	02010	IRSWITCH		0		02202	61000	00000		
.	02011			0ELTAO		02203	61410	02202		
.	02012	UTAGSWITCH		U-TAG	DATA+50000*DATA2	02204	00000	00000		
.	02013			0		02211	00000	00000		
.	02014	OATASWITCH		DATA		02212	00000	00000		
.	02015			0		02213	00000	00000		
.	02016	AZ1NSW		0		02214	00000	00000		
.	02017			0		02215	00000	00000		
.	02020	ELINSM		0		02216	00040	51115		
.	02021			0		02217	00000	00000		
.	02022	AZOUTSW		0		02220	00000	00000		
.	02023			0		02221	00000	00000		
.	02024	ELOUTSW		0		02222	00000	06000		
.	02025			0		02223	00000	00000		
.	02026	OOPOUTSW		0		02224	74510	53000		
.						02225	02611	71000		
.						02226	00000	53000		
.						02227	00000	71000		
.						02230	00000	57000		
.						02231	00000	75000		
.						02232	00000	70000		
.						02233	00000	75000		
.						02234	00000	72000		
.						02235	00000	54000		
.						02236	00000	73000		
.						02237	00000	55000		
.						02240	00000	74000		

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SPURT OUTPUT NO. 210  
J00\*1/22/65

CAROS	L1 TO LABEL	TA STATEMENT	LOC	F JK8 Y	NOTES
*	02027	0 DOPOUT	02241	00000 56000	
*	02030 MYHEAO	RESERVE 260	02242	00000 00000	
*	C2031 T1	FO 100* HH MM SS RA(OEG) OEC(OEG)	002274	05151 50522	
*		INSTANCE OISTOOT			
*			02275	22053 03005	
*			02276	27065 11112	
*			02277	14400 50511	
*			02300	12105 11112	
*			02301	14400 50505	
*			02302	11163 03106	
*			02303	23101 20505	
*			02304	05051 11630	
*			02305	31112 43105	
*	02032	FO 100* RA00T AZIM ELEV	02306	05050 52706	
*		CAZIM TRUERANGE			
*			02307	11243 10505	
*			02310	05050 50506	
*			02311	37162 20505	
*			02312	05051 22112	
*			02313	33050 50505	
*			02314	05100 53716	
*			02315	22050 50531	
*			02316	27321 22706	
*			02317	23141 20505	
*	02033	FO 60*RA(HMS)	02320	27065 11522	
*		OEC(OMS)	02321	30400 50505	
*			02322	05050 50511	
*			02323	12105 11122	
*			02324	30400 50505	
*			02325	05050 50505	
*	C2034 T2	FO 100* ANG RANGE00T OEC	CR02326	05050 50505	
*		SELEV			
*			02327	05050 50505	
*			02330	05302 70605	
*			02331	05050 50505	
*			02332	30111 21005	
*			02333	05050 50510	
*			02334	27062 31412	
*			02335	05052 70623	
*			02336	14121 12431	
*			02337	05051 11210	
*			02340	11243 10505	
*			02341	05300 63716	
*			02342	22050 50505	
*			02343	30122 11233	
*			02344	05050 50510	
*			02345	12211 23305	
*			02346	05053 01611	
*			02347	12273 11622	
*			02350	12050 50505	
*	02035	FO 100*00T SAZIM SELEV	02351	05050 50505	
*		STOERTIME	02352	05050 50505	
*			02353	05050 50505	
*			02354	05050 50505	
*			02355	05050 50505	
*			02356	05050 50505	
*			02357	05050 50505	
*			02358	05050 50505	
*			02359	05050 50505	
*			02360	05050 50505	

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SPURT OUTPUT NO. 210  
JDO\* 1/22/65

CAROS	LI	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
				02353	05050	50505		
				02354	05050	50505		
				02355	05050	50505		
				02356	05050	50505		
				02357	05050	50505		
*	02037	BIGT	F0 100* TIME ACTUALAZ ACTUALEL COMANDO	02360	05311	52212		
			AZ COMANDEL COMANDO	02361	05050	61031		
				02362	32062	10637		
				02363	05061	03132		
				02364	06211	22105		
				02365	10242	20623		
				02366	11063	70510		
				02367	24220	52311		
				02370	12210	51024		
				02371	22062	31124		
				02372	25250	52224		
				02373	11123	00505		
				02374	05050	50505		
				02375	05050	50505		
				02376	05050	50505		
				02377	05050	50505		
	02040		F0 6*PP MOOES	02400	05050	50505		
				02401	05050	50505		
				02402	05050	50505		
				02403	05050	50505		
				02404	05050	50505		
				02405	05050	50505		
				02406	00000	00000		
				02502	00000	00000		
				02503	00000	00000		
				02504	00000	00000		
				02505	00000	00000		
				02506	00000	00000		
				02507	00000	00000		
				02510	00000	00000		
				02511	00000	00000		
				02512	00000	00000		
				02513	00000	00000		
				02514	00000	00000		
				02515	00000	00000		
				02516	00000	00000		
				02517	00000	00000		
				02520	00000	00000		
				02521	00000	00000		
				02522	00000	00000		
				02523	00000	00000		
				02524	00000	00000		
				02525	00000	00000		
				02526	00000	00000		
				02552	00000	00000		
				02576	00000	00000		
				02577	00000	00000		

		PRINTOUT		SPURT OUTPUT NO. 210		JOO 1/22/65				
CARD	LI IO LABEL	TA STATEMENT		LOC	F	J	K	R	Y	NOTES
	C2073	PL6RA0IUS	0	02600	00000	00000				
•	02074	PL6RA0SOT	0	02601	00000	00000				
•	C2075	PL6RA00T	0	02602	00000	00000				
•	C2076	PL6CAZIM	0	02603	00000	00000				
•	C2077	PL6ELLEV	0	02604	00000	00000				
•	02100	PL6CAZIM	0	02605	00000	00000				
•	C2101	PL6TRURNG	0	02606	00000	00000				
•	C2102	PL6SRA	0	02607	00000	00000				
•	C2103	PL6S0EC	0	02610	00000	00000				
•	C2104	PL6GRANGE	0	02611	00000	00000				
•	02105	PL6RNG00T	0	02612	00000	00000				
•	C2106	PL60EC00T	0	02613	00000	00000				
•	02107	PL6SAZIM	0	02614	00000	00000				
•	02110	PL6SELLEV	0	02615	00000	00000				
•	02111	PL6CELEV	0	02616	00000	00000				
•	02112	PL6S0RTME	0	02617	00000	00000				
•	02113	PL6SYSTAT2	0	02620	00000	00000				
•	02114	PL6SPARE1	0	02621	00000	00000				
•	02115	INSERTX	JP <b>WXLOOPX</b>	02622	61000	01407				
•	C2116	AZINEQ	EQUALS RECAZIM+OELTAO							
•	C2117	ELINEQ	EQUALS RECELEV+OELTAO							
•	02120	AZOUTEQ	EQUALS AZIMOUT+OELTAO							
•	02121	ELOUTEQ	EQUALS ELEVOUT+OELTAO							
•	02122	OPOUTEQ	EQUALS OPPOUT+OELTAO							
•	C2123	UNPACK	ENTRY							
•	02124		STR A•L(STOREUNPAK)							
•	02125		PUT L(UNPACK)•L(PUTCOUNTER)							
				02625	10010	02623				
				02626	14010	02632				
				02627	16310	02661				
				02630	16410	02662				
				02631	16510	02663				
				02632	10030	00000				
				02633	14030	02664				
				02634	36010	02623	INDEX RETURN POINT			
				02635	12300	00000	CLEAR WORD COUNTER			
				02636	10010	02664	FWA OF PACKED TABLE			
				02637	14010	02645				
				02640	11020	02664	WORD COUNT			
				02641	21000	00001	WORD COUNT - 1			
				02642	15010	02653				
				02643	12400	00000	CLEAR CHARACTER COUNTER			
				02644	12500	00004	SET TO LOOP 5 TIMES			
				02645	10033	00000	PACKED WORD			
				02646	11000	00000	CLEAR ACCUMULATOR			
				02647	07000	00006	NEXT CHARACTER OF PACKED WORD			
				02650	15014	00000	STORE IN JNPACK TABLE			
				02651	71400	77777	INDEX JNPACK TABLE			
				02652	72500	02646	FINISHED THIS WORD...			
				02653	71500	00000	YES. FINISHED ALL WORDS...			
				02654	61000	02644	NO.			
				02655	12310	02661				
				02656	12410	02662				

PRINTOUT						SPURT OUTPUT NO. 210					
						J00*1/22/65					
CAROS	L	IO LABEL	TA STATEMENT	LOC	F	J	K	B	Y	NOTES	
	-	02154	ENT B5•L(SVB5)	02657	12510	02663					
	-	C2155	EXIT	02660	61010	02623	YES.				
	-	02156	SVB3	02661	00000	00000					
	-	02157	SVB4	02662	00000	00000					
	-	02160	SVB5	02663	00000	00000					
	-	C2161	COUNTER	02664	00000	00000					
	-	02162	PRINT	02665	61000	00000	PRINT ON CONSOLE TYPEWRITER				
	-	02163	PUT W(JPRINTOVER)*W(62)	02666	10030	02723					
	-	C2164	PUT L(PRINT)*L(SETUP)	02667	14030	00062					
	-	02165	SETUP	02670	10010	02665					
	-	02165	PUT W(01)*W(UNPACKCODE)	02671	14010	02672					
	-	C2166	RPL Y+J•L(PRINT)	02672	10030	00000					
	-	02167	ENT A•BUFFERPRINT+3	02673	14030	02677	INODE RETURN POINT				
	-	02170	UNPACK	02674	36010	02665					
	-	02171	UNPACKCODE	02675	11000	02730					
	-	C2172	ENT Q•U(UNPACKCODE)	02676	55000	02623	JPACK FIELDATA TEXT				
	-	02173	MUL 5	02677	00000	00000					
	-	02174	A00 Q•BUFFERPRINT+3	02700	02677	00000	COUNT OF WORDS				
	-	C2175	STR Q•L(STORECR)	02701	22000	00005	COUNT OF CHARACTERS				
	-	C2176	A00 Q•L(STORECR)	02702	26000	02730					
	-	02177	STR Q•L(STORELF)	02703	14010	02707					
	-	02200	ENT A•L(BUFFERPRINT)	02704	26000	00001					
	-	02201	STORECR	02705	14010	02711	TERMINATE LINE WITH CARRIAGE				
	-	C2202	ENT A•L(BUFFERPRINT+2)	02706	11010	02725					
	-	C2203	STORELF	02707	15010	00000					
	-	02204	STR A•L(0)	02710	1010	02727					
	-	02205	LSH A•150	02711	15010	00000	LNA OF UNPACKED TEXT				
	-	C2206	SEL SET•BUFFERPRINT	02712	14040	00000					
	-	02207	STR A•W(PRINTBUFFC1)	02713	06000	00017					
	-	02210	OUT TYPE•W(PRINTBUFFC1•MONITOR	02714	50000	02725					
	-	02211	WAITPRINT	02715	15030	02724					
	-	C2212	PRINTOVER	02716	76130	02724					
	-	02212	RPT 10000	02717	61000	02717					
	-	02213	OIV }	02720	70000	01750					
	-	02214	EXIT	02721	23000	00001					
	-	02215	JPRINTOVER	02722	61010	02665					
	-	C2216	PRINTBUFFC	02723	60100	02720	BUFFER CONTROL FOR PRINTING				
	-	02217	BUFFERPRINT	02724	00000	00003	LINE FEED				
	-	02220	0 03	02725	00000	00003	LINE FEED				
	-	C2221	0 04	02726	00000	00004	CARRIAGE RETURN				
	-	02222	RESERVE 1000	02727	00000	00000					
	-	02223	READTAP	02730	00000	00000	ESTABLISH INPUT BUFFER				
	-	02224	ENTRY	03074	61000	03200	READ SPURT 210 TAPE				
	-		PUT L(READTAP)*L(INBUFFER)	03075	10010	03074					
	-	02225	RPL Y+1•L(READTAP)	03076	14030	03101	INODE RETURN POINT				
	-	02226	CL R2*	03077	36010	03074					
	-	02227	INBUFFER	03100	12200	00000					
	-	C2230	PUT W(JPC15EXT)*W(351	03101	73670	00000					
	-	02231	EX-FCT TAPE•52000000004	03102	10030	03200	BINARY-HO TAPE ON UNIT 2				
	-	02232	WAIT1	03104	13670	07506	WAIT FOR INTERRUPT				
	-			03105	61000	03105					

SPURT OUTPUT NO. 210						
JOO-1/22/65						
CARD	L1	IO LABEL	TA STATEMENT	PRINTOUT	LOC	F JKB Y
	02233	C15EXTINT	STR TAPE#WISTAT)		03106	17670 03323
•	02234		ENT A#WISTAT1		03107	11020 03323
•	02235		RSH A#110		03110	02000 00013
•	02236		A00 A#STATUSCOOE		03111	20000 03137
•	02237		STR A#LINTERJUMP)		03112	15010 03114
•	02240		R1L		03113	60000 00000
•	02241	INTERJUMP	JP L(0)		03114	61010 00000
	02242	BACK	EXIT		03115	61010 03074
•	02243	INTERLOCK	PUT W(UNITNOINT1#WILOCKP)		03116	10030 03136
•	02244		RJP PRINT		03117	14030 03131
•	02245		110 INTERLOCKP		03120	65000 02665
•	02246		JP INBUFFER#STOP		03121	00013 03123
•	02247	INTERLOCKP	F0 6# THERE IS AN INTERLOCK ON UNIT		03122	61400 03101
	02250	LOCKP	F0 5#C. CORRECT AND START.		03123	31151 22712
	02251	UNITNOINT	F0 1#C.		03124	05163 00506
•	02252	STATUSCOOE	00 MACHERR		03125	23051 52331
•	02253		04 MACHERR		03126	12272 12410
•	02254		10 MACHERR		03127	20052 42305
•	02255		14 MACHERR		03130	32231 53105
•	02256		20 MACHERR		03131	10750 50510
•	02257		24 INBUFFER		03132	24272 71210
•	02260		30 MACHERR		03133	31050 52311
•	02261		34 MACHERR		03134	05303 10627
•	02262		40 BACK		03135	31750 50505
•	02263		44 PARITY		03136	10750 50505
•	02264		50 MACHERR		03137	00000 03265
•	02265		54 WRITEEOF		03140	00004 03266
•	02266		60 INPUTAPENO		03141	00010 03266
•	02267		64 MACHERR		03142	00014 03266
•	02270		70 MACHERR		03143	00020 03265
•	02271		74 INTERLOCK		03144	00024 03101
•	02272	MACHFAULT	F0 100# A MACHINE FAULT HAS OCCURRED ON 03157		03145	00030 03266
			MAGNETIC TAPE UNIT		03146	00034 03266
					03147	00040 03115
					03150	00044 03201
					03151	00050 03266
					03152	00054 03253
					03153	00060 03324
					03154	00064 03266
					03155	00070 03266
					03156	00074 03116
					03157	06052 20610
					03160	15162 31205
					03161	13063 22131
					03162	05150 53005
					03163	24101 03227
					03164	27121 10524
					03165	23052 20614
					03166	23123 11610
					03167	05310 62512
					03170	05322 31631

CAROS		LI 10 LABEL	TA STATEMENT	PRINTOUT	SPURT OUTPUT NO. 210 J00•1/22/65	LOC	F JKBY	NOTES
*	02273 UNITNO	FO 5•C . THE STATUS CODE IS				03171	10057 50505	
*	02274 FOSTATCODE	FO 2•				03172	31151 20530	
*	02275 JPC15EXT	R1LJP C1SEXTINT PUT U(UNITNOINT)•U(PMSG)				03173	31063 13230	
*	02276 PARITY					03174	05102 41112	
*	02277	RJP PRINT 110 PARITYMSG				03175	05163 00505	
*	02300	JP MACHERR				03176	05050 50505	
*	02301	EX-FCT TAPE#2030000004				03177	05050 50505	
*	02302 TRYAGAIN					03200	60100 03106	
*	02303	RPT 777777				03201	10020 03136	
*	02304	NO-OP				03202	14020 03224	
*	02305	INBUFFER				03203	65000 02665	PRINT PARITY MESSAGE
*	02306 PARITYMSG	FO 100•A PARITY OCCURRED 10 TIMES ON				03204	00013 03212	
*		AGNETIC TAPE UNIT				03205	61000 03266	
*						03206	13670 07507	BACKSPACE REC WITHOUT INTERR
*	02307 PMSG	FO 1•C.				03207	70000 77777	
*	02310 TAPEPARMSG	RESERVE 110				03210	12000 00000	
*	02311 FOTAPEPAR	FO 100•A PARITY OCCURRED ON INPUT TAPE#0240				03211	61000 03101	READ RECORD AGAIN
*		IN FOLLOWING LI				03212	06052 50627	
*	02312	FO 1•C.				03213	16313 60524	
*	02313 WRITEEOF	RJP PRINT				03214	10103 22727	
*	02314	80 EOFNEWS				03215	12110 56124	
*	02315	RJP FINALIZER				03216	05311 62212	
*	02316	JP (PORUN)				03217	300052 42305	
*	02317 UNIT210	FO 1• C.				03220	22061 42312	
*	02320 BAONEWS	FO 6•QUESTIONABLE DATA FOLLOWS.				03221	31161 00531	
*						03222	06251 20532	
*						03223	23163 10505	
*						03224	10750 50505	BCD PARITY MESSAGE
*						03225	00000 00000	
*						06052	50627	

SPURT OUTPUT NO. 210  
J00\*1722/65

CAROS	L1	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
*	02321	MACHERR	RJP PBLANK 1 1280	03265	75050	50505		
*	02322		RJP E	03266	65000	05621		
*	02323		RJP PFO	03267	00001	00200		
*	02324		RJP 0 BAONEWS	03270	65000	02202		
*	02325		300 1	03271	65000	05557		
*	02326		RJP E	03272	00000	03260		
*	02327		RJP PSCRIB	03273	00036	00001		
*	02330		0 3	03274	65000	02202		
*	02331		RJP E	03275	65000	06057	OSCRIB	
*	02332		RJP PBLANK 1 1280	03276	00000	00003		
*	02333		RJP E	03277	65000	02202		
*	02334		RJP E	03300	65000	05621	OBLANK	
*	02335		RJP E	03301	00001	00200		
*	02336		JP L(READTAPE)	03302	65000	02202		
*	02337	KOCTT0FO	ENTRY	03303	61010	03074		
*	02340		CL A*	03304	61000	00000		
*	02341		LSH AQ*3	03305	11000	00000		
*	02342		LSH A*3	03306	07000	00003		
*	02343		LSH AQ*3	03307	06000	00003		
*	02344		LSH A*3	03310	07000	00003		
*	02345		LSH AQ*3	03311	06000	00003		
*	02346		LSH A*3	03312	07000	00003		
*	02347		LSH AQ*3	03313	06000	00003		
*	02350		LSH A*3	03314	07000	00003		
*	02351		LSH AQ*3	03315	06000	00003		
*	02352		NO-OP	03316	07000	00003		
*	02353	DUMMY	A00 A*W(EXCESS60)	03317	12000	00000		
*	02354		EXIT	03320	20030	03322		
*	02355	EXCESS60	60606 06060	03321	61010	03304		
*	02356	STAT	0 EX-FCI	03322	60606	06060		
*	02357	INPUTAPENO	TAPE#2030000004	03323	00000	00000		
*	02358		RJP PRINT	03324	13670	07507		
*	02361		110 EOTNEWS	03325	65000	02665		
*	02362		JP L(BACK)*STOP	03326	00013	03330		
*	02363	EOTNEWS	FO 110*END OF TAPE***MOUNT NEXT TAPE	03327	61410	03115		
*			NO HI SPEED TO RESUM	A03330	12231	10524		
*	02364	EOFNEWS	FO BO*END OF FILE***RETURNING TO SYST03343	03331	13053	10625		
*			EM***	03332	12757	57522		
*				03333	24322	33105		
*				03334	23123	53105		
*				03335	31062	51205		
*				03336	06231	10515		
*				03337	16053	02512		
*				03340	12110	53124		
*				03341	05271	23032		
*				03342	22050	50505		
*				03343	12231	10524		
*				03344	13051	31621		
*				03345	12757	57575		
*				03346	27123	13227		
*				03347	23162	31405		

SPURT OUTPUT NO. 210  
JOD\*1/22/65

CARDS	L1	ID	LABEL	TA STATEMENT	PRINTOUT	LOC	F	JK8	Y	NOTES
						03350	31240	53036		
						03351	30311	22275		
						03352	75750	50505		
						03353	06230	51223		
						03354	11052	41305		
						03355	31062	51205		
						03356	15063	DD524		
						03357	10103	22727		
						03360	12110	52423		
						03361	05322	31631		
						03362	05057	50515		
						03363	06231	4D523		
						03364	12340	53106		
						03365	25120	50623		
						03366	11053	03106		
						03367	27317	5D505		
						03370	00000	00000		
						03371	00000	00000		
						03372	06050	50505		
						03373	77777	03374		
						03374	12211	21031		
						03375	05247	42575		
						03376	75750	51530		
						03377	25055	12440		
						03400	05050	71011		
						03401	05310	52512		
						03402	05516	14D05		
						03403	05072	43115		
						03404	05516	24005		
						03405	77777	77777		
						03406	11050	5D505		
						03407	00011	03412		
						03410	00000	00000		
						03411	00000	00002		
						03412	00000	0DD00		
						03413	61000	0D000		
						03414	15030	03462		
						03415	14030	03463		
						03416	16110	03464		
						03417	16210	03465		
						03420	16310	03466		
						03421	16410	03467		
						03422	16510	03470		
						03423	16610	03471		
						03424	16710	03472		
						03425	61010	03413		
						03426	61000	0D000		
						03427	11030	03462		
						03430	10030	03463		
						03431	12110	03464		
						03432	12210	03465		

SPURT OUTPUT NO. 210  
J00\*1/22/65

CAROS	L1	IO	LABEL	TA	STATEMENT	LOC	F	J	K	B	Y	NOTES
	02422			ENT	83*L(KP3)	03433	12310	03466				
	C2423			ENT	84*L(KP4)	03434	12410	03467				
	02424			ENT	85*L(KP5)	03435	12510	03470				
	02425			ENT	86*L(KP6)	03436	12610	03471				
	02426			ENT	87*L(KP7)	03437	12710	03472				
	C2427			EXIT		03440	61010	03426				
	02430		TOREWQ	FO	1*A	03441	06050	50505				
	02431			-0	\$+1	03442	77777	03443				
	02432			FO	O*TAP IS OK(0) REWIN IT(1) ENO F103443	31062	51205					
				LE+REWIND(21)								
	02433			-0		03444	16300	52420				
	02434		TOREWQ	FO	1*0	03445	51244	00527				
	02435			11	REWYRN	03446	12341	62311				
	C2436			0		03447	05163	15161				
	02437			2		03450	40051	22311				
	02440		REWYRN	0		03451	05131	62112				
	02441		KPA	0		03452	42271	23416				
	02442		KPQ	0		03453	23115	16240				
	02443		KP1	0		03454	77777	77777				
	02444		KP2	0		03455	11050	50505				
	02445		KP3	0		03456	00011	03461				
	C2446		KP4	0		03457	00000	00000				
	02447		KP5	0		03460	00000	00002				
	02450		KP6	0		03461	00000	00000				
	02451		KP7	0		03462	00000	00000				
	C2452		TAPEOUTPUT			03463	00000	00000				
	02453					03464	00000	00000				
	02454					03465	00000	00000				
	02455					03466	00000	00000				
	C2456					03467	00000	00000				
	02457					03476	00202	07275				
	02460					03477	11000	03506				
	02461					03500	65000	04204				
	02462					03501	00202	07274				
	02463					03502	65000	03746				
	02464		BCOBLOCK			03503	04060					
	02465		CARRIAGEC			03504	65000	03426				
	02466		LAYOUT	RESERVE	1300	03505	61010	03473				
	02467			0	01	03506	00000	00000				
	02468		TOPOFPAGE	0	12	03507	00000	00001				
	02469		DOUBLESP	0	20	03744	00000	00012				
	02470		SINGLESP			03745	00000	00020				
	02471					03746	61000	00000	WRITE J401 BCO TAPE			
	02472					03747	10010	03746	SET ADDRESS OF BUFFER CONTROL			
	02473		WRITE	ENTRY								
	02474			PUT	L(WRITE1*L(WRITEOUT))							

..... PRINTOUT ..... SPURT OUTPUT NO. 210  
J00•1/22/65

CARDS	L1	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	C2475 02476		RPL Y+1*L(WRITE) PUT W(JPINTERRUP)*W(35)	03750 03751 03752 03753 03754 03755 03756 03757 03758 03759 03760 03761 03762 03763 03764 03765 03766	14010 36010 10030 14030 13670 60000 74670 61000 60100 17670 11020 02000 20000 15010 61010	03756 03746 03760 00035 07510 00000 00000 03757 03761 04011 04011 00013 04012 03766 00000		SET FOR NORMAL RETURN SET INTERRUPT REGISTER
.	02477	WRITEAGAIN	EX-FCT C15•1220000010	03767	13670	07510		WRITE RCO HO w/INTERRUPT
.	C2500	WRITEOUT	RIL OUT C15•(0)	03768	60000			
.	02501	HERE	JP HERE	03769	74670	00000		
.	C2502	JPIINTERRUP	RILUP INTERRUPT	03770	61000	03757		WAIT FOR EXTERNAL INTERRUPT
.	02503	INTERRUPT	STR C15•(CHANNEL) ENT A•(CHANNEL)	03771	17670 11020 02000 20000 15010	04011 04011 00013 04012 03766		
.	02504		RSH A•110	03772	13670	07510		
.	C2505		A00 A•STATCOOE	03773	70000	77777		PICK UP STATUS MRO
.	C2506		STR A•(INTJUMP)	03774	23000	00001		
.	02507		JP L(0)	03775	13670	07512		LOCATION OF STATUS JUMP TABLE
.	02510	INTJUMP	PUT L(WRITE)*L(READTAPE)	03776	70000	03766		
.	02511		JP MACHERR	03777	23000	00001		JUMP TO APPROPRIATE STATUS TIME
.	02512	BAOMCH	EX-FCT C15•2030000010	03778	61000	03746		
.	02513	REOUNOANT	RPT 77777	03779	13670	07511		
.	C2514		OIV 1	03780	70000	77777		BACKSPACE 1 RECORD
.	02515		EX-FCT C15•0030000010	03781	23000	00001		
.	02516		RPT 77777	03782	13670	07512		ERASE FORWARD
.	02517		OIV 1	03783	70000	77777		
.	C2520		JP WRITEAGAIN	03784	23000	00001		
.	02521		EX-FCT C15•0230000010	03785	61000	03754		REWRITE RECORD
.	02522	ENOTAPE	RJP PRINT	03786	04001	13670	07513	#RITE EN0-OF-FILE HO
.	02523		90 NEWTAPE	03787	04002	65000	02665	
.	C2524		EX-FCT C15•2110000010	03788	04003	00011	04033	
.	C2525		EXIT STOP	03789	13570	07514		REWIND WITH INTERLOCK
.	02526		RJP PRINT	03790	04004	00005	61410	03746
.	02527	INTERLOCK	120 WAKEUP	03791	04006	65000	02665	
.	C2530		JP WRITEOUT*STOP	03792	04007	00014	04044	
.	02531		O	03793	04010	61400	03756	
.	02532	CHANNEL	0	03794	04011	00000	00000	
.	02533		C2534 STATCOOE	03795	04012	00000	03767	NOT USED
.	02534		00 BAOMCH	03796	04013	00004	03767	NOT USED
.	02535		04 BAOMCH	03797	04014	00010	03767	NOT USED
.	02536		10 BAOMCH	03798	04015	00014	03767	NOT USED
.	02537		14 BAOMCH	03799	04016	00020	03767	CHAR SYNC SEQUENCE ERROR
.	C2540		20 BAOMCH	03800	04017	00024	03767	REWINDING
.	02541		24 WRITEOUT	03801	04018	00030	03767	CHARACTER COUNT ERROR
.	02542		30 BAOMCH	03802	04019	00034	03767	FUNCTION MRO ERROR
.	02543		34 BAOMCH	03803	04020	00040	03746	NORMAL COMPLETION
.	02544		40 WRITE	03804	04021	00044	03772	PARITY
.	02545		44 REOUNOANT	03805	04022	00044	03772	CONTROL UNIT SEQUENCE ERROR
.	02546		50 BAOMCH	03806	04023	00050	03767	ENO OF FILE
.	02547		54 BAOMCH	03807	04024	00054	03767	ENO OF TAPE
.	02550		60 ENOTAPE	03808	04025	00060	04001	NOT USED
.	02551		64 BAOMCH	03809	04026	00064	03767	ABNORMAL FRAME COUNT
.	02552		70 BAOMCH	03810	04027	00064	03767	INTERLOCK
.	02553		74 INTERLOCK	03811	04028	00064	04006	
.	C2554	WRITESERVO	1•0. C	03812	04029	11750	50510	
.	02555	NEWTAPE	F0	03813	04030	22331	22331	

SPURT OUTPUT NO. 210  
J00\*1/22/65

CAROS	L1 TO LABEL	TA STATEMENT	PRINTOUT	LOC	F	JK6	Y	NOTES
		O START.		04 034	05231	23405		
				04 035	24323	12532		
				04 036	31053	10625		
				04 037	12052	42305		
				04 040	32231	53105		
				04 041	06231	10530		
				04 042	31062	73175		
				04 043	05050	50505		
				04 044	16233	11227		
				04 045	21241	02005		
				04 046	13063	22131		
				04 047	05242	30524		
				04 050	32312	53231		
				04 051	05310	62512		
				04 052	05322	31631		
				04 053	05057	50513		
				04 054	16350	51631		
				04 055	05062	31105		
				04 056	30310	62731		
				04 057	75050	50505		
			ENTRY	04 060	61000	00000	TRANSLATE FIELDATA TO BCO	
			PUT L(TRANSLATE)*L(TRANS)	04 061	10010	04060		
				04 062	14010	04063		
			PUT W(0)*W(COUNT)	04 063	10030	00000		
				04 064	14030	04103		
			PUT L(COUNT)*L(TRANS1)	04 065	10010	04103	FWA OF FIELDATA TEXT	
				04 066	14010	04073		
			PUT W(0)*W(COUNT)	04 067	14010	04077		
				04 070	36010	04060	INDEX RETURN POINT	
			STR Q=L(TRANS1)	04 071	37020	04103	CHARACTER COUNT = 1	
			RPL Y=1*L(TRANSLATE1)	04 072	12200	00000	CLEAR CHARACTER COUNTER	
			CL B2	04 073	11012	00000	TEXT	
			ENT A*L(B2)				NEXT CHARACTER OF FIELDATA TEXT	
			RSK B2*U(COUNT)	04 100	71220	04103	HAVE WE TRANSLATED ALL CHARACT	
							ERS...	
			JP TRANS1	04 101	61000	04073	NO.	
			EXIT	04 102	61010	04060	YES. RETURN	
			0	0	00000	00000		
			00 20	04 104	00000	00020	SPACE	
			01 20	04 105	00001	00020	SPACE	
			02 20	04 106	00002	00020	SPACE	
			03 13	04 107	00003	00013		
			04 20	04 110	00004	00020	SPACE	
			05 20	04 111	00005	00020	SPACE	
			06 61	04 112	00006	00061	A	

SPURT OUTPUT NO. 210  
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CAROS	LI TO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	C2610	07 62	041113	00007	00062	B	
•	02611	10 63	04114	00010	00063	C	
•	02612	11 64	04115	00011	00064	O	
•	02613	12 65	04116	00012	00065	E	
•	C2614	13 66	04117	00013	00066	F	
•	02615	14 67	04120	00014	00067	G	
•	02616	15 70	04121	00015	00070	H	
•	02617	16 71	04122	00016	00071	I	
•	C2620	17 41	04123	00017	00041	J	
•	02621	20 42	04124	00020	00042	K	
•	02622	21 43	04125	00021	00043	L	
•	02623	22 44	04126	00022	00044	M	
•	C2624	23 45	04127	00023	00045	N	
•	02625	24 46	04130	00024	00046	O	
•	02626	25 47	04131	00025	00047	P	
•	02627	26 50	04132	00026	00050	Q	
•	C2630	27 51	04133	00027	00051	R	
•	02631	30 22	04134	00030	00052	S	
•	02632	31 23	04135	00031	00023	T	
•	02633	32 24	04136	00032	00024	U	
•	C2634	33 25	04137	00033	00025	V	
•	02635	34 26	04140	00034	00026	W	
•	02636	35 30	04141	00035	00030	X	
•	02637	36 30	04142	00036	00030	Y	
•	C2640	37 31	04143	00037	00031	Z	
•	02641	40 74	04144	00040	00074	J	
•	02642	41 40	04145	00041	00040	-	
•	02643	42 60	04146	00042	00060	+	
•	C2644	43 20	04147	00043	00020	LESS THAN = BLANK	
•	02645	44 13	04150	00044	00013	GREATER THAN = BLANK	
•	02646	45 20	04151	00045	00020	QUOTATION MARK	
•	02647	46 60	04152	00046	00060	AMPERSAND	
•	C2650	47 53	04153	00047	00053	DOLLAR SIGN	
•	02651	50 54	04154	00050	00054	ASTERISK	
•	02652	51 34	04155	00051	00034	!	
•	02653	52 14	04156	00052	00014	COLON	
•	02654	53 13	04157	00053	00013	SPACE	
•	02655	54 20	04160	00054	00020	SPACE	
•	02656	55 20	04161	00055	00020	SPACE	
•	02657	56 33	04162	00056	00033	'	
•	C2660	57 20	04163	00057	00020	SPACE	
•	02661	60 12	04164	00060	00012	O	
•	02662	61 01	04165	00061	00001	I	
•	02663	62 02	04166	00062	00002	2	
•	C2664	63 03	04167	00063	00003	3	
•	02665	64 04	04170	00064	00004	4	
•	02666	65 05	04171	00065	00005	5	
•	02667	66 06	04172	00066	00006	6	
•	C2670	67 07	04173	00067	00007	7	
•	C2671	70 10	04174	00070	00010	8	
•	02672	71 11	04175	00071	00011	9	
•	02673	72 14	04176	00072	00014	APOSTROPHE	
•	C2674	73 73	04177	00073	00073	SEMICOLON = PERIOD	

\*\*\*\*\* PRINTOUT \*\*\*\*\*

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CARD	L1 L0 LABEL	TA STATEMENT	LOC	F	J	K	B	Y	NOTES
02675	*	74 21	04200	00074	00021				/
02676	..	75 73	04201	00075	00073	*			
02677	..	76 20	04202	00076	00020	SPACE			
02700	..	77 20	04203	00077	00020	STOP			
02701	PACK	ENTRY A*L(STOREPACK)	04204	61000	00000	PACK 5 CHARACTERS PER WORD			
02702	..	PUT L(PACK1*L(PUTCOUNT)	04205	15010	04232	FROM OF PACKED TABLE			
02703	..		04206	10010	04204				
02704	PUTCOUNT	PUT W(01*W(WOROCOUNT)	04207	14010	04210				
02705	..	RPL Y+1*L(PACK)	04211	14030	04236				
02706	..	CL B3	04212	36010	04204	INDEX RETURN POINT			
02707	..	PUT L(WOROCOUNT)*L(GETCHAR)	04213	12300	00000	CLEAR WORD COUNTER			
02710	..	ENT Q*U(WOROCOUNT)	04214	10010	04236				
02711	..	CL A	04215	14010	04227				
02712	..	01V 5	04216	10020	04236	CHARACTER COUNT			
02713	..	SUB Q*1	04217	11000	00000				
02714	..	STR Q*L(LOOPLIMIT1)	04220	23000	00005	{CHARACTER COUNT/5			
02715	..	CL B4	04221	27000	00001	PACKED WORD COUNT - 1			
02716	LOOPSTART2	ENT B5*4	04222						
02717	..	CL A	04223	12400	00000	CLEAR CHARACTER COUNTER			
02720	LOOP2	LSH A*6	04224	12500	00004	SET TO LOOP 5 TIMES			
02721	GETCHAR	SEL SET*U(B4)	04225	11000	00000	CLEAR ACCUMULATOR			
02722	..	BSK B4*77777	04226	06000	00006				
02723	..	BUP B5*LOOP2	04227	50024	00000	A00 NEXT CHARACTER			
02724	STOREPACK	STR A*W(B31)	04230	71400	77777	INDEX UNPACK TABLE			
02725	LOOPLIMIT2	BSK B3*0	04231	72500	04226	FINISHED THIS WORD..			
02726	..	JP LOOPSTART2	04232	15033	00000	YES. STORE UNPACKED WORD			
02727	..	EXIT	04233	71300	00000	FINISHED STORING PACKED WORDS			
02730	WOROCOUNT	0 0	04234	61000	04224				
02731	ENOTAPEU	FO 1* C.	04235	61010	04204	NO			
02732	DECINOMS	ENTRY	04236	00000	00000				
02733	..	CL W(OECSIGN)	04237	05107	50505				
02734	..	JP \$+3*QPOS	04240	61000	00000				
02735	..	STR B0*CPW(OECSIGN)	04241	16030	04271				
02736	..	CP Q*	04242	60200	04245				
02737	..	MUL W(0360B31	04243	04243	16071				
02740	..	STR A*W(OECOE61)	04244	14000	00000				
02741	..	CL A*	04245	22030	04272				
02742	..	RSH AQ*1	04246	04246	04272				
02743	..	MUL W(060B11	04247	15030	04273				
02744	..	STR A*W(OECMIN)	04248	11000	00000				
02745	..	CL A*	04249	03000	00001				
02746	..	RSH AQ*1	04250	04250	03000				
02747	..	MUL W(060B11	04251	22030	04333				
02750	..	STR A*W(OECSEC1	04252	15030	04275				
02751	..	CL A*	04253	11000	00000				
02752	..	RSH AQ*1	04254	03000	00001				
02753	..	MUL 200*QPOS	04255	04255	22000	00024			
02754	..	A*1	04256	04256	15030	04275			
02755	..	STR A*W(OECSECXX1	04257	11000	00000				

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CAROS	L1	I0	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	02756			SUB A=100*AZERO	04264	21400	00012		
	02757			EXIT	04265	61010	04240		
	02760			STR A=W(OECSXXX)	04266	15030	04276		
	02761			RPL Y+1=W(OECSSEC)	04267	36030	04275		
	02762			EXIT	04270	61010	04240		
	02763			0	04271	00000	00000		
	02764			0000005500	04272	00000	05500	0EC	3600.B3
	02765			0	04273	00000	00000		
	02766			0	04274	00000	00000		
	02767			0	04275	00000	00000		
	02770			0	04276	00000	00000		
	02771			NEGSIGN 41000 0	04277	41000	00000		
	02772			0	04300	75000	00000		
	02773			OECPPOINT 75000 0	04301	61000	00000		
	02774			ENTRY	04302	16030	04334		
	02775			CL W(RASIGN1	04303	60200	04306		
	02776			JP \$+3*QPOS	04304	16070	04334		
	02777			STR B0=W(RASIGN)	04305	14000	00000		
	02777			CP Q#	04306	22030	04332		
	03000			MUL W(028B31	04307	15030	04335		
	03001			STR A=W(RAHH1	04310	11000	00000		
	03002			CL A#	04311	03000	00001	F	HR S B29
	03003			RSH AQ# 1	04312	22030	04336		
	03004			MUL W(D60B1)	04313	15030	04337		
	03005			STR A=W(RAMM1	04314	11000	00000		
	03006			CL A#	04315	03000	00001	F	MIN B29
	03007			RSH AQ# 1	04316	04333			
	03010			MUL W(060B11	04317	15030	04337		
	03011			STR A=W(RASS1	04320	11000	00000		
	03012			CL A#	04321	03000	00001	F	SEC B29
	03013			RSH AQ# 1	04322	22200	00310		
	03014			MUL 2000*QPOS	04323	20000	00001		
	03015			A00 A# 1	04324	15030	04340		
	03016			STR A=W(RASSXXX)	04325	21400	00144		
	03017			SUB A=1000*AZERO	04326	61010	04301		
	03020			EXIT	04327	15030	04340		
	03021			STR A=W(RASSXX)	04330	36030	04337		
	03022			RPL Y+1=W(RASS1	04331	61010	04301		
	03023			EXIT	04332	00000	00300	0EC	24.B3
	03024			0	04333	00000	00170	0EC	60.B1
	03025			0000000300	04336	00000	00000		
	03026			0000000170	04337	00000	00000		
	03027			0	04340	00000	00000		
	03030			RAHH	04342	05051	62310		
	03031			RAHH	04343	24221	52314		
	03032			RASS	04344	05162	31024		
	03033			RASSXXX	04345	22162	31405		
	03033		LABELA	FO 100* TIME INCOMING INCOMING COMMAND04341	04346	10242	22206		
				O COMMAND RECD R	04347	23110	50510		

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CAROS	L1 IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	PRINTOUT		04350	24222	20623		
			04351	11050	52712		
•	03034	FO 100*/A REVO OECLN OMNO OECLN COMNO 00	04352	10334	10527		
		COMND R/A	04353	74060	50505		
			04354	27121	03311		
			04355	05111	21021		
			04356	23050	51024		
			04357	22231	10527		
			04360	74060	50505		
			04361	10242	22311		
			04362	05111	21021		
			04363	23051	02422		
•	03035	FO 2*PLR MODES	04364	23110	51124		
	03036 LABELB	FO 100* SECs AZIMUTH ELEVATION AZIMUTH H ELEVATION HH MM S	04365	25212	70522		
			04366	24111	23005		
			04367	05301	21030		
			04370	05050	63716		
			04371	22323	11505		
			04372	12211	23306		
			04373	31162	422305		
			04374	06371	62232		
			04375	31150	51221		
			04376	12330	63116		
			04377	24230	51515		
			04400	05222	20530		
•	03037	FO 100*SS 000 MM SS.S 00 MM SS.S CYCLES/S	04401	30753	03005		
			04402	11111	10522		
			04403	22053	03075		
			04404	30050	51515		
			04405	05222	20530		
			04406	30753	03005		
			04407	11111	10522		
			04410	22053	03075		
			04411	30051	03610		
			04412	21123	07430		
			04413	12107	50506		
•	03040	FO 2*EC. ABCOE	04414	07101	11205		
			04415	31163	12112		
	03041	TITLEKEY	04416	06050	50505		
	03042	ANNTITLE	04417	77777	04420		
	03043		04420	31163	12112		
	03044	O*TITLE FOLLOWS	04421	05132	42121		
			04422	24343	00505		
			04423	77777	77777		
	03045		04424	06050	50505		
	03046	PRINTITLE	04425	77777	02072		
	03047		FO 00*THIS IS AN ACEPHALOUS LOGICAL	31151	53005		
	03050	MUTE	ILE				
			04427	16300	50623		
			04430	05061	01225		

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CARD#	L1 TO LABEL	TA STATEMENT	PRINTOUT	LOC	F	JKB	Y	NOTES
				04431	15062	12432		
				04432	30052	12414		
				04433	16100	52105		
				04434	13162	11205		
				04435	05050	50505		
				04436	05050	50505		
				04437	05050	50505		
				04440	05050	50505		
				04441	05050	50505		
				04442	05050	50505		
				04443	05050	50505		
				04444	05050	50505		
				04445	05050	50505		
				04446	05050	50505		
				04447	05050	50505		
				04450	05050	50505		
				04451	05050	50505		
				04452	05050	50505		
				04453	05050	50505		
				04454	05050	50505		
				04455	05050	50505		
				04456	05050	50505		
				04457	05050	50505		
				04460	06050	50505		
				04461	777777	04462		
				04462	24242	53056		
				04463	75757	52324		
				04464	05311	63121		
				04465	12050	50505		
				04466	77777	77777		
				04467	06050	50505		
				04470	77777	04471		
				04471	14223	10530		
				04472	31062	73105		
				04473	51151	52222		
				04474	30304	00505		
				04475	77777	77777		
				04476	11050	50505		
				04477	00011	04502		
				04500	00000	00000		
				04501	00016	51400		
				04502	00000	00000		
				04503	06050	50505		
				04504	77777	04505		
				04505	14223	10512		
				04506	23110	55115		
				04507	15222	23030		
				04510	40050	50505		
				04511	77777	77777		
				04512	11050	50505		
				04513	00011	04517		
				04514	00000	00000		

SPURT OUTPUT NO. 210				J00•1/22/65			
PRINTOUT		TA STATEMENT		LOC		F JKB Y	
CARD	LI TO LABEL	TA STATEMENT					NOTES
	C3077	4800000	04515	00016	51400		
	03100	QNSERTA	JP QWLOOP	04516	61000	00337	
	03101	ANSENTH	0	04517	00000	00000	
	03102	COMPAREST	0	04520	00000	00000	ST IN F OAY B28 (TRUETIME)
	03103	COMPARET	0	04521	00000	00000	
	03104	HAXETIME	3777777777	04522	37777	77777	
	03105	OMSHRS	0	04523	00000	00000	
	03106	OMSMINS	0	04524	00000	00000	
	03107	OMSECS	0	04525	00000	00000	
	03110	OMEHS	0	04526	00000	00000	
	03111	OMEMINS	0	04527	00000	00000	
	03112	OMESECS	0	04530	00000	00000	
	C3113	OMSECTG	0	04531	00000	00000	
	03114	OMSECTTG	0	04532	00000	00000	
	03115	CSKEY	F0 1* MCPGM	04533	22102	51422	
	03116	TELLONE	F0 1*A	04534	06050	50505	
	C3117		S+1	04535	77777	04536	
	03120		0*00NE.....	04537	11242	31275	
				04537	75755	57505	
	03121		-0	04540	77777	77777	
	C3122	ASTARX	50000 00000	04541	50000	00000	
	03123	ROCONV	ENTRY	04542	61000	00000	
	03124		JP ROSTART	04543	61000	04551	
	03125	ROPA	0	04544	00000	00000	AZ IN REV B19
	C3126	ROPE	0	04545	00000	00000	EL IN REV B19
	03127	ROPR	0	04546	00000	00000	TRUERANGE
	03130	ROPS	0	04547	00000	00000	SIOERTIME BEGIN THIS FRAME
	03131	ROPG	0	04550	00000	00000	AGE THIS POINT THIS FRAME IV S
							EC B2B
	03132	ROSTART	ENT A*W(ROINIT!NO1*ANEG	04551	11730	05027	
	03133		JP ROINIT	04552	61000	04762	
	03134		ENT Q*W(ROPA)	04553	10030	04544	
	C3135		LP*W(RO19BITS1	04554	40030	05031	
	03136		LSH AQ*3BO	04555	07000	00046	
	03137		MUL W(ROTHSIXTY)	04556	22030	05033	
	03140		LSH AQ*3	04557	07000	00003	
	C3141		STR A*W(ROAZI	04560	15030	05034	
	03142		ENT Q*W(ROPE1	04561	10030	04545	
	03143		ENT LP*W(RO19BITS1	04562	40030	05031	
	03144		LSH AQ*3BO	04563	07000	00046	
	C3145		MUL W(ROTHSIXTY1	04564	22030	05033	
	03146		LSH AQ*3	04565	07000	00003	
	03147		STR A*W(ROEL1	04566	15030	05035	
	03150		ENT A*W(ROPR1*ANOT	04567	11530	04546	IS RANG
	03151		JP ROSETK	04570	61000	04607	
	03152		ENT A*W(ROPR1*APOS	04571	11630	04546	
	03153		CP A*	04572	15040	00000	
	03154		STR A*W(ORANGE1	04573	15030	05036	
	C3155		CL Q*	04574	10000	00000	
	03156		ENT A*W(ROK11	04575	11030	05037	
	03157		RSH AQ*90	04576	03000	00011	
	03160		OIV W(ORANGE1	04577	23030	05036	
	C3161		STR Q*W(ROK111	04600	14030	05040	

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CAROS	LI TO LABEL	TA STATEMENT	LOC	F	J	K	B	Y	NOTES
	03162	ENT A*W(ROK21)	04601	11030	05041				
	03163	CL Q*	04602	10000	00000				
	03164	RSH AQ*90	04603	03000	00011				
	03165	DIV W(ROANGE)	04604	23030	05036				
	03166	STR Q*W(ROK21)	04605	14030	05042				
	03167	JP \$+3	04606	61000	04611				
	03170	ROSETK CL W(ROK11)	04607	(6030	05040	RANGE (S	INFINITE		
	03171	CL W(ROK21)	04610	16030	05042				
	03172	ENT A*W(WROAZ1)	04611	11030	05034				
	03173	ENT Q*W(ROTSF)	04612	10030	05043				
	03174	RJP COS	04613	65000	05140				
	03175	STR A*W(ROCOAZ)	04614	15030	05044				
	03176	ENT A*W(WROAZ1)	04615	11030	05034				
	03177	ENT Q*W(ROTSF)	04616	10030	05043				
	03200	RJP SIN	04617	65000	05151				
	03201	STR A*W(WROSINA1)	04620	15030	05045				
	03202	ENT A*W(WROEL1)	04621	11030	05035				
	03203	ENT Q*W(ROTSF)	04622	10030	05043				
	03204	RJP COS	04623	65000	05140				
	03205	STR A*W(WROCOSEL1)	04624	15030	05046				
	03206	ENT A*W(WROEL1)	04625	11030	05035				
	03207	ENT Q*W(ROTSF)	04626	10030	05043				
	03210	RJP SIN	04627	65000	05151				
	03211	STR A*W(WROSINEL1)	04630	15030	05047				
	03212	ENT Q*W(WROTSEC1)	04631	10030	05050				
	03213	MUL W(ROPG1)	04632	22030	04550				
	03214	ADO A*W(WROPS1)	04633	20030	04547				
	03215	SUB A*W(WROTHS(XTY1)*APOS1)	04634	21630	05033				
	03216	A00 A*W(WROTHS(XTY1)	04635	20030	05033				
	03217	STR A*W(WROSITEDR1)	04636	15030	05051				
	03220	ENT Q*W(ROTSF)	04637	10030	05043				
	03221	RJP COS	04640	65000	05140				
	03222	STR A*W(WROCOSSITE1)	04641	15030	05052				
	03223	ENT A*W(WROSITEDR1)	04642	11030	05051				
	03224	ENT Q*W(ROTSF)	04643	10030	05043				
	03225	RJP SIN	04644	65000	05151				
	03226	STR A*W(WROSINSITE1)	04645	15030	05053				
	03227	ENT Q*W(WCOSEL1)	04646	(0030	05046				
	03230	MUL W(WOCOSAZ)	04647	22030	05044				
	03231	LSH AQ*330	04650	07000	00041				
	03232	MUL W(WROCOSSPHEE1)	04655	22030	05073				
	03237	LSH AQ*2	04656	07000	00002				
	03233	LSH AQ*1	04652	07000	00001				
	03234	STR A*W(WROTEMP1)	04653	15030	05054				
	03235	ENT Q*W(WROFACT1)	04654	10030	05047				
	03236	MUL W(WROCOSSPHEE1)	04655	22030	05073				
	03240	LSH AQ*2	04656	07000	00002				
	03241	SUB A*W(WROK11)	04657	21030	05054				
	03242	STR A*W(WROFACT1)	04660	20030	05040				
	03243	LSH AQ*300	04661	15030	05055				
	03244	MUL W(WROCOSSITE1)	04662	07000	00036				
	03245	LSH AQ*1	04663	22030	05052				
	03246	STR A*W(WROTEMP1)	04664	07000	00001				
			04665	15030	05054				

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CAROS	L1	IO LABEL	TA STATEMENT	PRINTOUT				LOC	F	JK8	Y	NOTES
				ENT	MUL	LSH	STR					
	03247		Q*W(ROCOSEL) W(ROSTNAZ)					046666	10030	05046		
	03250		AQ*320					046677	22030	05045		
	03251		Q*W(ROFACT121)					046700	07000	00040		
	03252		W(RODSINSITE)					046711	14030	05056		
	03253		LSH AQ*1					046722	22050	05053		
	03254		CP A*					046733	07000	00001		
	03255		A00 A*W(ROTEMP1)					046744	15040	00000		
	03256		STR A*W(ROXSPRIME)					046755	20030	05054		
	03257		ENT Q*W(ROFACT121)					046766	15030	05057		
	03260		MUL W(ROCOSSITE1)					046777	10030	05056		
	03261		LSH AQ*1					04700	22030	05052		
	03262		STR A*W(ROTEMP1)					04701	07000	00001		
	03263		ENT Q*W(ROFACT121)					04702	15030	05054		
	03264		MUL W(RO5INSITE)					04703	10030	05055		
	03265		LSH AQ*1					04704	22030	05053		
	03266		A00 A*W(ROTEMP1)					04705	07000	00001		
	03267		STR A*W(ROXSPRIME)					04706	20030	05054		
	03270		ENT Q*W(ROSINEL)					04707	15030	05060		
	03271		MUL W(RO5INPHEE1)					04710	10030	05047		
	03272		LSH AQ*1					04711	22030	05012		
	03273		STR A*W(ROTEMP1)					04712	07000	00001		
	03274		ENT Q*W(ROCOSEL)					04713	15030	05054		
	03275		MUL W(ROCOSSAZ)					04714	10030	05046		
	03276		LSH AQ*320					04715	22030	05044		
	03277		MUL W(ROCOSPHEE1)					04716	07000	00040		
	03300		LSH AQ*1					04717	22030	05073		
	03301		A00 A*W(ROTEMP1)					04720	07000	00001		
	03302		STR A*W(ROZSPRIME)					04721	20030	05054		
	03303		ENT A*W(ROK21)					04722	15030	05061		
	03304		R5H AQ*1					04723	11030	05062		
	03305		CP A*					04724	03000	00001		
	03306		A00 A*W(ROZSPRIME)					04725	15040	00000		
	03307		STR A*W(ROXSPRIME)					04726	20030	05061		
	03310		ENT Q*W(ROXSPRIME)					04727	15030	05061		
	03311		MUL W(ROXSPRIME1)					04730	10030	05057		
	03312		STR A*W(ROTEMP1)					04731	22030	05057		
	03313		ENT Q*W(ROXSPRIME1)					04732				
	03314		MUL W(ROXSPRIME)					04733	10030	05060		
	03315		A00 A*W(ROTEMP1)					04734	22030	05060		
	03316		ENT Q*W(RO5CALB24)					04735	20030	05054		
	03317		R5P SQRT					04736	10030	05062		
	03320		JP \$+1					04737	65000	05074		
	03321		LSH AQ*310					04740	61000	04741		
	03322		ENT A*W(ROZSPRIME)					04741	07000	00037		
	03323		ATAN R5P					04742	11030	05061		
	03324		LSH AQ*300					04743	65000	05257		
	03325		MUL W(RORAOTOREV1)					04744	07000	00036		
	03326		LSH AQ*1					04745	22030	05070	B56	
	03327		STR A*W(DECOUT1)					04746	07000	00001	B57 IN REV	
	03330		ENT A*W(ROXSPRIME)					04747	15030	05065		
	03331		ENT ATAN R5P					04750	11030	05060		
	03332		Q*W(ROXSPRIME)					04751	10030	05057		
	03333		ATAN R5P					04752	65000	05257		

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CAROS	L) IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
03334		RSH AQ•)•APOS	04753	03600	00001		
03335		A00 A•H(ROTHSIXTY)	04754	20030	05033		
03336		LSH AQ•300	04755	07000	00036		
03337		MUL H(RORAOTOREV)	04756	22030	05070		
03340		LSH AQ•2	04757	07000	00002	B27 IN REV	
03341		STR A•H(RAOUT)	04760	15030	05066		
03342	ROINIT	EXIT	04761	61010	04542		
03343		ENT A•H(ROINITINO)	04762	11030	05027		
03344		CP A*	04763	15040	00000		
03345		STR A•H(ROINITINO)	04764	15030	05027		
03346		ENT Q•M(GEOOETLAT)	04765	10030	53321		
03347		MUL MICROEGRAO)	04766	22030	05067		
03350		LSH AQ•7	04767	07000	00007		
03351		STR A•H(ROPHEE)	04770	15030	05071		
03352		ENT Q•W(ROTSF1)	04771	10030	05043		
03353		RJP SIN	04772	65000	05151		
03354		STR A•W(ROSINPHEE)	04773	15030	05072		
03355		ENT A•H(ROPHEE)	04774	11030	05071		
03356		Q•W(ROTSF1)	04775	10030	05043		
03357		RJP COS	04776	65000	05140		
03360		STR A•W(ROCOSPHEE)	04777	15030	05073		
03361		ENT Q•W(YRTRAN1)	05000	10030	63327		
03362		MUL MICROINPHEE)	05001	22030	05072		
03363		LSH AQ•1	05002	07000	00001		
03364		STR A•W(ROK1)	05003	15030	05037		
03365		ENT Q•H(ZRTRAN)	05004	10030	53330		
03366		MUL H(ROCOSPHEE)	05005	22030	05073		
03367		LSH AQ•2	05006	07000	00002		
03370		A00 A•W(ROK1)	05007	20030	05037		
03371		STR A•H(ROK1)	05010	15030	05037		
03372		ENT Q•W(ZRTRAN)	05012	22030	05072		
03373		MUL MICROINPHEE)	05013	07000	00002		
03374		LSH AQ•2	05014	15030	05041		
03375		STR A•H(ROK2)	05015	10030	53327		
03376		ENT Q•W(YRTRAN)	05016	22030	05073		
03377		MUL H(ROCOSPHEE)	05017	07000	00001		
03400		LSH AQ•)	05020	21030	05041		
03401		SUB A•H(ROK2)	05021	15030	05041		
03402		STR A•W(ROK2)	05022	10030	53101		
03403		ENT Q•W(FRAMESIZE1	05023	05000	00001		
03404		LSH Q•)	05024	22030	05064		
03405		MUL HROWONSEC1	05025	14030	05050		
03406		STR Q•W(ROTWSEC)	05026	61000	04551		
03407	ROINITINO	JP ROSTART	05027	00000	00001		
03410	ROINITINO	O 00020	05030	00020	00000		
03411	ROWREV	O )	05031	00017	77777		
03412	ROJBITS	00017 77777	05032	07777	77777		
03413	ROREVMASK	07777 77777	05033	31103	75523		
03414	ROTHSIXTY	31103 75523	05034	00000	00000		
03415	ROAZ	O O	05035	00000	00000		
03416	ROEL	O O	05036	00000	00000		
03417	RORANGE	O O	05037	00000	00000		
03420	ROK1	O O					

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CAROS	L1	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	03421	RDK11	0 0	05040	00000	00000		
	C3422	ROK2	0 0	05041	00000	00000		
	03423	ROK21	0 0	05042	00000	00000		
	03424	ROTSF	0 260	05043	00000	00032		
	03425	ROGOSAZ	0 0	05044	00000	00000		
	C3426	ROSINAZ	0 0	05045	00000	00000		
	03427	ROCOSEL	0 0	05046	00000	00000		
	03430	ROSINEL	0 0	05047	00000	00000		
	03431	ROTSEC	0 46100	05050	00000	46100		RAOIAN MEASURE ONE SECS B28
	C3432	ROSITER	0 0	05051	00000	00000		
	03433	ROCOSSITE	0 0	05052	00000	00000		
	C3434	ROSINSITE	0 0	05053	00000	00000		
	03435	ROTEMP	0 0	05054	00000	00000		
	C3436	ROFACT 1	0 0	05055	00000	00000		
	03437	ROFACT 2	0 0	05056	00000	00000		
	03440	ROXSPRIME	0 0	05057	00000	00000		
	03441	ROYSPRIME	0 0	05060	00000	00000		
	C3442	ROZSPRIME	0 0	05061	00000	00000		
	03443	ROSCALB24	0 240	05062	00000	00030		
	03444	RORAOTOEQ	34513 56032	05063	34513	56032		
	03445	ROWONSEC	0 11420	05064	00000	11420		
	C3446	DECOUT	0 0	05065	00000	00000		
	03447	RAOUT	0 0	05066	00000	00000		
	03450	ROOEGRAD	0043575063	05067	00435	75063	OEC	•011745329829
	03451	RORAOTOREV	05057 46031	05070	05057	46031		
	03452	ROPHEE	0 0	05071	00000	00000		
	03453	ROSINPHEE	0 0	05072	00000	00000		
	03454	ROCOSPHEE	0 0	05073	00000	00000		
	03455	SQRT	JP	05074	61000	05074	ARBITRARY	
	03456	CL	Q*	05075	10000	00000	CLEAR Q	
	03457	RPT	140	05076	70000	00016	NORMALIZE	
	03460	RSH	AQ*2*AZERO	05077	03400	00002	SHIFT UNTIL A 0	
	03461	JP	L(SQRT)*ANOT	05100	60510	05074	ERROR,BIT 28 OR 29 1	
	C3462	LSH	AQ*280	05101	07000	00034	NORMALIZE IN A	
	03463	STR	A*(SQRT+340)*ANOT	05102	15530	05136	STORE NORMALIZED RAOICANO	
	03464	JP	SQRT+290	05103	61000	05131	RAOICANO 0	
	03465	RSH	A*3	05104	02000	00003	DIVIDE BY B FOR LINEAR APPROX	
	03466	COM	A*(SQRT+310)*YMORE	05105	04730	05133	SKIP IF BIT 24 3	
	03467	A00	A*M(SQRT+330)*SKIP	05106	20130	05135	A00 7/8	
	03470	15140	00000	05107	15140	00000	CP*ASKIP	
	03471	A00	A*(SQRT+340)*SKIP	05110	20130	05136	ARG8+7/8+ARG	
	03472	A00	A*(SQRT+320)*SKIP	05111	20130	05134	A00 9/32	
	03473	RSH	A1*SKIP	05112	02100	00001	DIVIDE BY 2	
	03474	A00	A*(SQRT+340)	05113	20030	05136	ARG/8+9/32+ARG	
	03475	STR	A*M(SQRT+350)	05114	15030	05137	LINEAR APPROX COMPLETE	
	03476	ENT	A*(SQRT+340)	05115	11030	05136	ENTER RAOICANO (SCALED AT 28)	
	03477	RSH	AQ*2	05116	03000	00002	SCALE AT 26	
	C3500	OIV	W(SQRT+350)	05117	23030	05137	OIVIOE (SCALED AT 281)	
	03501	A00	Q*M(SQRT+350)	05120	26030	05137		
	03502	RSH	Q*1	05121	01000	00001		
	03503	STR	Q*M(SQRT+350)	05122	14030	05137		

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CAROS	LI	IO LABEL	TA STATEMENT	LOC	F	JK8	Y	NOTES
	03504		ENT A*WISQRT+340)	05123	11030	05136		ENTER RADICAND
	03505		RSH AQ*2	05124	03000	00002		SCALE 2(LARG) AT 26
	03506		0IV WISQRT+350)	05125	23030	05137		0IV(0,RESULT IN Q
	03507		ENT Y+Q*WISQRT+350)	05126	30030	05137	2(RESULT TO A	
	03510		RSH AQ*1+B7*QPOS	05127	03207	00001		
	03511		A00 A*1	05130	20000	00001		ROUND
	03512		ENT B7*LISQRT)	05131	12710	05074		EXIT ADDRESS TO B7
	03513		JP 1+B7	05132	61007	00001		RETURN
	03514		01000 00000	05133	01000	00000		
	03515		04400 00000	05134	04400	00000		9/32 AT 2B
	03516		16000 00000	05135	16000	00000		7/B AT 28
	03517		0 0	05136	00000	00000		TEMPORARY
	03520		0 0	05137	00000	00000		TEMPORARY AT Y
	03521	COS	JP COS	05140	61000	05140		ARBITRARY
	03522		ENT B7*L(COS)	05141	12710	05140		STORE EXIT
	03523		STR B7*L(SIN)	05142	16710	05151		
	03524		ENT B7*I	05143	12700	00001		FLAG
	03525		STR B7*I(SIN+420)	05144	16710	05223		
	03526		JP COS+7*AP05	05145	60600	05147		
	03527		CP A*	05146	15040	00000		
	03528		JP SIN+2*ANOT	05147	60500	05153		
	03530		ENT A*WISIN+600)	05150	11030	05245		COS 10) 1
	03531		JP SIN	05151	61000	05151		ARBITRARY
	03532	SIN	STR B0*LISIN+420)	05152	16010	05223		FLAG
	03533		STR A*WISIN+680)*AP05	05153	15530	05255		
	03534		CP A*	05154	15040	00000		SET POSITIVE
	03535		RPT 290	05155	70000	00035		
	03536		LSH A*1,ANEG	05156	06700	00001		SHIFT UNTIL BIT 29 1
	03537		JP LISIN)	05157	61010	05151		SIN(X) 0
	03540		LSH A*290	05160	06000	00035		SHIFT RIGHT 1
	03541		SUB Q*B7*QPOS	05161	27607	00000		QNEG IMPLIES X EXCEEOS PI/2
	03542							
	03543		JP SIN+340	05162	61000	05213		
	03544		COM Q*300*YMORE	05163	04300	00036		PREVENT ILLEGITIMATE SHIFT
	03545		ENT Q*300	05164	10000	00036		EQ SHIFT 30
	03546		STR Q*LISIN+130)	05165	14010	05166		SOTRE SHIFT COUNT
	03547		RSH A*0	05166	02000	00000		SCALE ARGUMENT AT 28
	03550		COM A*W(SIN+590)*YMORE	05167	04730	05244		COMPARE WITH PI/2
	03551		JP SIN+370	05168	61000	05216		REDUCE TO 1ST QUADRANT
	03552		BSK B0*LISIN+420)	05169	71010	05223		SKIP IF SINE
	03553		SUB A*WISIN+590)*SKIP	05170	21130	05244		PI/2-X TO A
	03554		ENT Q*WISIN+680)*QPOS	05171	10230	05255		CHECK SIGN
	03555		CP A*	05172	15040	00000		A BEARS PROPER SIGN
	03556		STR A*WISIN+680)	05173	15030	05255		STORE SIGNED ARGUMENT
	03557		ENT Q*A	05174	10070	00000		SCALED AT 28
	03560		MUL WISIN+680)	05175	22030	05255		X 2 AT 2B+28 56
	03561		RSH AQ*290	05176	03000	00035		SQUARED AT 27
	03562		STR Q*WISIN+690)	05177	14030	05256		STORE X 2
	03563		ENT Q*WISIN+640)	05178	10030	05251		C9
	03564		ENT B7*3	05179	12700	30003		LOOP 4 TIMES
	03565		MUL WISIN+690)	05180	22030	05256		SUM POLYNOMIAL
	03566		ENT Q*A	05181	10070	00000		
	03567		ENT Q*WISIN+600+B7)	05182	26037	05245		

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CARD	LI TO LABEL	TA STATEMENT	PRINTOUT	LOC	F JK8 Y	NOTES
03570		BJP 87*5IN+270	05207 72700 05204			
03571		MUL W(5IN+6801	05210 22030 05255			SCALE AT 28
C3572		LSH AQ*2	05211 07000 00002			
03573		L(5IN)	05212 61010 05151			RETURN
03574		JP Q*X/(41*YLESS	05213 04240 17741			CHECK FOR LEGIT SHIFT
03575		ENT Q*X77741	05214 10040 77741			-30
C3576		STR Q*CPL(5IN+130)	05215 14050 05166			
03577		RSH AQ*2	05216 03000 00002			
03600		DIV W(5IN+5901	05217 23030 05244			FORM X/(P1/2)
03601		ENT A*0	05220 11000 00000			CLEAR A
C3602		LSH AQ*L(5IN+1301	05221 07010 05166			INTEGER TO A, FRACTION IN J
03603		LSH AQ*2	05222 07000 00002			
03604	A00	A*0	05223 20000 00000			
03605		RSH AQ*2	05224 03000 00002			0 FOR SIN, 1 FOR COS
03606		ENT LP*(5IN+6701*ANOT	05225 40530 05254			
03607		ENT LP*(W(5IN+6001*ANOT	05226 40530 05245			
03610		JP SIN+510	05227 61000 05234			
C3611		SUB LP*(5IN+6601	05230 42030 05253			
03612		ENT Q*(W(5IN+6801*QPOS	05231 10230 05255			ACCCORD SIGN
03613		CP A*	05232 15040 00000			
03614		JP L(5IN1	05233 61010 05151			
C3615		ENT LP*(W(5IN+6501*000	05234 40330 05252			
03616		JP SIN+560	05235 61000 05241			
03617		14200 0	05236 14200 00000			CP, Q, QPOS
03620		SUB Q*(W(5IN+660)* SKIP	05237 27130 05253			
C3621	A00	Q*(W(5IN+6601	05240 26030 05253			
03622		MUL W(5IN+5901	05241 22030 05244			
03623		LSH AQ*2	05242 07000 00002			SCALE AT 28
03624		JP SIN+180	05243 61000 05113			RETURN
03625		31103 75524	05244 31103 75524			P1/2 AT 28
03626		20000 00000	05245 20000 00000			C1 150 AT 28
03627		52525 25600	05246 52525 25600			C3-0\$1666 665669E0831
03630		10420 71732	05247 10420 71732			C5 0.83302519E-2834
03631		76301 15701	05250 76301 15701			C7 -1.980741431E-3837
03632		00127 23405	05251 00127 23405			C9 0.2601886909E-3840
03633		60000 00000	05252 60000 00000			
03634		40000 00000	05253 40000 00000			
C3635		17777 77777	05254 17777 77777			
03636		0 0	05255 00000 00000			TEMPORARY
03637		0 0	05256 00000 00000			TEMPORARY
03640	ATAN	JP ATAN	05257 61000 05257			
C3641		5TR A*(W(ATAN+6201*AP05	05260 15630 05355			
03642		CP A*	05261 15040 00000			SET POSITIVE
03643		5TR Q*(W(ATAN+620)*QPOS	05262 14230 05356			
03644		CP Q*	05263 14000 00000			SET POSITIVE
C3645		5TR A-Q*(W(ATAN+6401	05264 33030 05357			FLAG BEARS SIGN (\$Y\$-\$X\$)
03646		ENT Y+Q*A	05265 30070 00000			RESTORE A,
03647		COM Q*A*YLESS	05266 04270 00000			MIN (\$Y\$, \$X\$) TO A
03650		LSH AQ*300	05267 07000 00036			INTERCHANGE A, Q
C3651		5TR Q*(W(ATAN+650)	05270 14030 05360			DIVISOR Q MAX (\$Y\$, \$X\$)
03652		RSH AQ*2	05271 03000 00002			SCALE DIVIOENO AT 28
03653		0IV W(ATAN+650)*N00F	05272 23230 05360			DIVISOR AT 0

CAROS		LI TO LABEL	TA STATEMENT	SPURT OUTPUT NO. 210 JOD*1/22/65	LOC	F JK8 Y	NOTES
		03654	JP L(ATAN)		05273	61010 05257	QUOTIENT AT 28
		03655	STR Q*W(ATAN+65D)		05274	14030 05360	CLEAR ACCUMULATOR
		03656	SUB A*A		05275	21070 00000	ROUND TO NEAREST 16TH
		03657	LSH AQ*6*QPOS		05276	07200 00006	LOAD INDEX REGISTER FOR TABLE
		03660	ADD A*1		05277	20000 00001	LOOKUP
		03661	ENT 87*A		05300	12770 00000	Y-YR AT 34
		03662	STR Q*W(ATAN+66D)		05301	14030 05361	YR AT 4
		03663	ENT Q*A		05302	10070 00000	Y YR AT 4+28 32
		03664	MUL W(ATAN+65D)		05303	22030 05360	4 1 AT 2 + 30 32
		03665	ADD A*4		05304	20000 00004	SCALE AT 1 + Y YR AT 28 14 Q
		03666	RSH AQ*4		05305	03000 00004	
		03667	STR Q*W(ATAN+65D)		05306	14030 05360	
		03670	ENT A*W(ATAN+66D)		05307	11030 05361	Y YR AT 34
		03671	RSH AQ*80		05310	03000 00010	SCALE DIVENDO AT 34-8+30
		03672	OIV W(ATAN+65D)		05311	23030 05360	(Y-Y)/(1+Y) YR)
		03673	STR Q*W(ATAN+65D)		05312	05360	2 AT 28
		03674	MUL W(ATAN+65D)		05313	22030 05360	2 AT 56
		03675	OIV W(ATAN+430)		05314	23030 05332	-3 AT 26, Q AT 56-26 30
		03676	MUL W(ATAN+65D)		05315	22030 05360	-2 3/3 AT 28
		03677	ADD A*W(ATAN+65D)		05316	05360	Z - 2 3/3 AT 28
		03700	ADD A*W(ATAN+45D+871)		05317	20030 05334	ADDITION ENTRY
		03701	ENT Q*W(ATAN+64D)*QNEG		05320	10330 05357	CHECK SIGN (\$Y\$, \$X\$)
		03702	SUB A*W(ATAN+44D)*SKIP		05321	21130 05333	COMPLEMENT ANGLE
		03703	CP A*		05322	15040 00000	SET NEGATIVE
		03704	RSH A*1		05323	020000 00001	RESULT AT 27
		03705	ENT Q*W(ATAN+63D)*QPOS		05324	10230 05356	SUPPLEMENT IF X NEGATIVE
		03706	ADD A*W(ATAN+44D)*SKIP		05325	20130 05333	P1/2 AT 28 P1 AT 27
		03707	CP A*		05326	15040 00000	SET POSITIVE
		03710	ENT Q*W(ATAN+62D)*QPOS		05327	10230 05355	ACCORD PROPER SIGN
		03711	CP A*		05330	15040 00000	
		03712	JP L(ATAN)		05331	61010 05257	EXIT
		03713	63774 42363		05332	63774 42363	3.016901 AT 26
		03714	31103 75524		05333	31103 75524	P1/2 AT 28 P1 AT 27
		03715	0 0		05334	00000 00000	ARCTAN(0/0/16) AT 28
		03716	00777 25336		05335	00777 25336	
		03717	01772 55652		05336	01772 55652	
		03720	02756 27552		05337	02756 27552	
		03721	03726 67277		05340	03726 67277	
		03722	04661 16716		05341	04661 16716	
		03723	0573 03120		05342	05573 03120	
		03724	06462 35661		05343	06462 35661	
		03725	07326 14701		05344	07326 14701	
		03726	10145 37512		05345	10145 37512	
		03727	10740 02726		05346	10740 02726	
		03730	11505 74016		05347	11505 74016	
		03731	12227 43722		05350	12227 43722	
		03732	12725 42304		05351	12725 42304	
		03733	13400 51742		05352	13400 51742	
		03734	14031 64134		05353	14031 64134	
		03735	14441 76652		05354	14441 76652	
		03736	0 0		05355	00000 00000	TEMPORARIES

CAROS		LI TO LABEL	TA STATEMENT	SPURT OUTPUT NO. 210 J00*1/22/65	LOC	F JK8 Y	NOTES
•	03737		0 0	05356 00000 00000			
•	03740		0 0	05357 00000 00000			
•	03741		0 0	05360 00000 00000			
•	03742		0 0	05361 00000 00000			
•	03743	KEYIN	MEANS C2				
•	03744	KEYOUT	MEANS C2				
•	03745	NIL	EQUALS 0				
•	03746		COMMENT ROUTINE				
•	03747		COMMENT CALLING				
•	03750		COMMENT RJP				
•	03751		COMMENT INOEX*Y				
•	03752		COMMENT NUMCHAR*COL				
•	03753		COMMENT ERROR				
•	03754		COMMENT NORMAL				
•	03755	PINT	ENTRY RJP	05362 61000 00000			
•	03756		PENTRY PINTERR	05363 65000 06243			
•	03757		ENT A*(W(B6))	05364 61000 05432			
•	03760		STR A*W(INTEGER)	05365 11036 00000			
•	03761		RJP BINOECINT	05366 15030 0171			
•	03762		RJP SUPZRO	05367 65000 06664			
•	03763		U-TAG I0INTEGER*2	05370 65000 07014			
•	03764		RJP PLAYUP	05371 07176 00002			
•	03765		U-TAG I0INTEGER*2	05372 65000 05265			
•	03766		ENT A*U11+B71*ANOT	05373 07175 00002			
•	03767			05374 11527 30001			
•	03770		JP PINTB	05375 61000 05406			
•	03771		SUB A*W(CHARNO)*APOS	05376 21530 05525			
•	03772		JP PINTERRA				
•	03773		JP PINTB*AZERO				
•	03774		STR A*W\$*2)				
•	03775		RJP PBLANK				
•	03776		0 0				
•	03777		C3777 JP PINTER				
•	04000		B1*L(IPCOLUMN)				
•	04001	PINTB	ENT A*W(SIGN)*AZERO				
•	04002		ENT A*41	05401 15030 05403			
•	04003		STR A*(PBUF+B1)	05402 65000 05621			
•	04004		BSK B1*1290	05403 00000 00000			
•	04005		JP \$*2	05404 61000 05432			
•	04006		JP PINTERR	05405 12110 05223			
•	04007		ENT B6*I	05406 11430 07173			
•	04010	PINTC	ENT A*W(PLAYUPSTOR+B6-1)	05407 11000 00041			
•	04011		STR A*LIPBUF+B1)	05410 15011 07274			
•	04012		BSK B1*1290	05411 71100 00201			
•	04013		JP \$*2	05412 61000 05414			
•	04014		JP PINTERR	05413 61000 05432			
•	04015		BSK B6*(CHARNO)	05414 12600 00001			
•	04016		JP PINTC	05415 11036 06321			
•	04017	PINTEXIT	JP Y+1*L1PINT)	05416 15011 07274			
•	04020		RPL Y+1*L1PINT)	05417 71100 00201			
•	04021		RPL Y+1*L(PINT)	05420 61000 05422			
•				05421 61000 05432			
•				05422 71630 06525			
•				05423 61000 05415			
•				05424 36010 05362			
•				05425 36010 05362			
•				05426 36010 05362			
TO PRINT AN INTEGER SEQUENCE PINT							

SPURT OUTPUT NO. 210  
J00-1/22/65

CARDS	L1 L0 LABEL	TA STATEMENT	LOC	F JK8 Y	NOTES
04022		STR B1*W1PCOLUMN1	05427	16130	06223
04023		RJP PRESTORE	05430	65000	06576
04024		EXIT	05431	61010	05362
04025	PINTER2	ENT A*W1PINTER11*SK1P	05432	11130	05436
04026	PINTER2	ENT A*W1PINTER21	05433	11030	05437
04027	PINTER2	RJP PERRORR	05434	65000	06613
04030	PINTER1	JP PINTER1+1	05435	61000	05425
04031	PINTER1	00001 PINT	05436	00001	05362
04032	PINTER2	00002 PINT	05437	00002	05362
04033		COMMENT ROUTINE	\$		
04034		COMMENT OF CALLING			
04035		COMMENT RJP			
04036		COMMENT INDEX*Y			
04037		COMMENT NUMCHAR*COL			
04040		COMMENT ERROR			
04041		COMMENT NORMAL			
04042		ENTRY RJP PENTRY	05440	61000	00000
04043		JP POCTERR	05441	65000	06243
04044		ENT A*W1B61	05442	61000	05471
04045		STR A*W1INTEGER1	05443	11036	00000
04050		RJP BINOCFL0	05444	15030	07171
04051		RJP PLAYUP	05445	65000	06715
04052		U-TAG I01INTEGER*2	05446	65000	06265
04053		ENT A*U11+B71*ANOT	05447	07176	00002
04054		ENT A* 100	05448	11527	00001
04055		ENT A* 100	05449	11000	00012
04056		SUB A* 100	05450	11000	00012
04057		CP A*	05451	21000	00012
04058		ENT B7*A	05452	21000	00012
04060		ENT A*W1LAYUPSTOR+B71	05453	15040	00000
04061	POCTA	STR A*LPBUF+B11	05454	12770	00000
04062		BSK B1*1290	05455	11037	06322
04063		JP \$+2	05456	15011	07274
04064		JP POCTERR	05457	71100	00201
04065		BSK B7*90	05458	61000	05462
04066		JP POCTA	05459	61000	05463
04067		ENT A*3	05460	61000	05464
04070		RPL A*Y*LPPOCT1	05461	61000	05471
04071	POCTB	STR B1*W1PCOLUMN1	05462	71700	00011
04072		RJP PRESTORE	05463	61000	05455
04073		EXIT	05464	11000	00003
04074		ENT A*W1POCTERR11	05465	24010	05440
04075	POCTERR	RJP PERRORR	05466	16130	06223
04076		ENT A*2	05467	65000	06576
04077		JP POCTB	05468	61010	05440
04100		00001 POCT	05469	11030	05475
04101	POCTERR1	COMMENT ROUTINE	05470	11000	05465
04102		COMMENT PLACE	05471	00001	05440
04103			05472	65000	06613
04104			05473	11000	00002
			05474	61000	05465
			05475	00001	05440

\$ TO CONVERT A FIXED POINT NUMBER  
AND IT IN THE PRINT BUFFER.

SPURT OUTPUT NO. 210				JDO#1/22/65			
CAROS	LI LO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	04105	COMMENT CALLING	05476	61000	00000		
	04106	COMMENT RJP	05477	65000	09243		
	04107	COMMENT INOEXXY	05500	61000	05550		
	C4110	COMMENT BINP*COL	05501	16620	05507		
	04111	COMMENT NUMCHARINT*	05502	11027	00001		
	04112	COMMENT ERROR	05503	15010	05507		
	04113	COMMENT NORMAL	05504	11017	00002		
	C4114	PFIX X	05505	15030	01710		
	04115	RJP PENTRY	05506	65000	05756		
	04116	JP PFIXERR					\$
	04117	STR B6*U(PFIXB1	05507	00000			
	04120	ENT A*U(1+B71	05510	65000	09265		
	04121	STR A*L(PFIXB1	05511	07176	00002		
	04122	ENT A*L(2+B71	05512	11027	00002		
	04123	STR A*W(BETA1					
	C4124	RJP COFFIX					
	04125	PFIXB	0	0	0		
	04126	RJP PLAYUP	05513	21630	06525		
	C4127	U-TAG I0INTEGER*2	05514	61000	05551		
	04130	ENT A*U(2+B71	05515	60400	05523		
	04131	SUB A*W(CHARNO1*AP05	05516	15010	05520		
	C4132	JP PFIXERR	05517	65000	05621		
	04133	JP PFIXC*AZERO	05520	00000			
	04134	STR A*L(\$+21	05522	12110	06223		
	04135	RJP PBLANK	05523	11430	01713		
	C4136	O	05524	61000	05550		
	04137	JP PFIXERR	05525	15011	01274		
	04140	ENT B1*L(IPCOLUMN1	05526	71100	00201		
	04141	ENT A*W(SIGN)*AZERO	05527	61000	05531		
	C4142	ENT A*41	05530	61000	05550		
	04143	STR A*L(PBUF+B11	05531	12600	00001		
	04144	BSK B1*I290	05532	11036	06121		
	04145	JP \$+2	05533	15011	01274		
	C4146	JP PFIXERR	05534	71100	00201		
	04147	ENT B6*I	05535	61000	05537		
	04150	ENT A*W(LAYUPSTOR+B6-I1	05536	61000	05550		
	04151	STR A*L(PBUF+B11	05537	71630	06525		
	C4152	BSK B1*I290	05540	61000	05552		
	04153	JP \$+2	05541	65000	06526		
	C4154	JP PFIXERR	05542	61000	05550		
	04155	ENT A*4	05543	11000	00004		
	C4156	JP PFIXERR	05544	24010	05476		
	04157	RJP PFRACSTOR	05545	16130	06223		
	04160	JP PFIXERR	05546	65000	05576		
	C4161	ENT A*4	05547	61010	05476		
	04162	RPL A+Y*L(PFIXI	05550	11130	05555		
	04163	STR B1*W(IPCOLUMN1					
	04164	RJP PRESTORE					
	04165	EXIT					
	04166	ENT A*W(PFIXERR1)*SKIP					
	04167	ENT A*W(PFIXERR2)	05551	11030	05556		

SPURT OUTPUT NO. 210  
J00\*1/22/65

CAROS	LI	IO	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	04170			RJP PERRR	05552	65000	06613		
	04171			ENT A*3	05553	11000	00003		
	04172			JP PFIXF+1	05554	61000	05444	ERROR EXIT	
	04173		PFIXERR1	00001	05555	00001	05476		
	04174		PFIXERR2	00002	05556	00002	05476		
	04175			COMMENT ROUTINE					\$ TO PRINT FIELD DATA DATA
	04176			COMMENT CALLING					SEQUENCE
	04177			COMMENT RJP					PFO
	04200			COMMENT INOEX*Y					
	04201			COMMENT NUMCHAR*COL					
	04202			COMMENT ERROR					
	04203			COMMENT NORMAL					
	04204			ENTRY					
	04205		PFO	RJP PENTRY	05557	61000	00000		
	04206			JP PF0ERR	05560	65000	06243		
	04207			STR B6*L(PFOA)	05561	61000	05614		
	04210			ENT A*(U(1+B7)*ANOT	05562	16610	05571	STORE ADORELL OF STRING	
	04211			ENT A*5	05563	11527	00001	GET NO. OF CHARACTERS	
	04212			ENT A*5	05564	11000	00005	IF ZERO, EQUALS 5	
	04213			STR A*L(PFOB)	05565	15010	05600		
	04214			ENT B7*1	05566	12700	00001		
	04215			ENT B6*0	05567	12600	00000		
	04216			ENT B5*0	05570	12500	00000		
	04217		PFOA	ENT Q*W(00+BS)	05571	10035	00000	GET NEXT FO WJRO	
	04220			CL A*	05572	11000	00000		
	04221			LSH A0*6	05573	07000	00006		
	04222			STR A*L(PBUF+B1)	05574	15011	07274		
	04223			BSK B1*1290	05575	71100	00201		
	04224			JP \$+2	05576	61000	05600		
	04225			JP PF0ERR	05577	61000	05614		
	04226		PFOB	BSK B7*00	05600	71700	00000		
	04227			JP \$+2	05601	61000	05603		
	04230			JP PFOC	05602	61000	05607		
	04231			BSK B6*4	05603	71600	00004		
	04232			JP PF0A+1	05604	61000	05572		
	04233			BSK B5*-1	05605	71500	77776		
	04234			JP PF0A	05606	61000	05571		
	04235		PFOC	ENT A*3	05607	11000	00003		
	04236			RPL A+Y*L(PFO)	05610	24010	05557		
	04237			STR B1*W(IPCOLUMN)	05611	16130	06223		
	04240			RJP PRESTORE	05612	65000	06576		
	04241			EXIT A*W(PFOERR1)	05613	61010	05557		
	04242		PF0ERR	ENT RJP PERRR	05614	11030	05620		
	04243			ENT A*2	05615	65000	36613		
	04244			JP PFOC+1	05616	11000	00002		
	04245		PFOERR1	00001 PFO	05617	61000	05610		
	04246			COMMENT	05620	00001	05557		
	04247			COMMENT ROUTINE					
	04250			COMMENT THE					
	04251			COMMENT CALLING					
	04252			COMMENT RJP					
	04253			COMMENT COL*NUMCOLS					
	04254								

\$ TO BLANK AN AREA OF  
OUTPUT BUFFER  
SEQUENCE  
PBLANK

SPURT OUTPUT NO. 210  
J00\*1/22/65

CAROS	L1 ID LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	04255	COMMENT	05621	61000	00000		\$
	04256	COMMENT	05622	15030	05666		
	04257	PBLANK	05623	14030	05667		SAVE ALL REGISTERS
	04260		05624	16710	05655		
	04261		05625	16110	05656		
	04262	STR A*W(PBLANK5)	05626	12710	05621		PARAMETER LOCATION
	04263	STR Q*W(PBLANK6)	05627	11527	00000		
	04264	STR B7*L(PBLANK2+1)	05630	61000	05635		COL IS ZERO
	04265	STR B1*L(PBLANK2+2)	05631	15010	05633		BUILD PCOLR CALLING SEQUENCE
	04266	ENT A*U(B71*ANOT					
	04267	PBLANK05					
	C4270	STR A*U(B71*ANOT					
	04271	RJP PCOLR	05632	65000	05670		
	04272	00	05633	00000	00000		
	04273	PBLANK3	05634	61000	05662		
	04274	ENT A*U(B71*ANOT	05635	11417	00000		
	04275	JP \$+3	05636	61000	05641		
	04276	ENT A*12B0	05637	11000	00200		
	04277	SUB A*W(PCOLUMN)	05640	21030	06223		
	C4300	ENT B7*A	05641	12770	00000		NUMBER OF COLUMNS TO BLANK
	04301	BJP B7*+\$+1	05642	72700	05643		
	04302	ENT B1*L(PCOLUMN)	05643	12110	06223		
	PBLANK1	CL A*	05644	11000	00000		
	04303	ENT A*U(PBUF+B11	05645	15011	07274		
	C4304	BSK B1*1290	05646	71100	00201		
	04305	JP \$+2	05647	61000	05651		
	04306	JP PBLANK3	05650	61000	05662		
	04307	JP B7*L(PBLANK1	05651	72700	05644		
	C4310	STR B1*W(PCOLUMN)	05652	16130	06223		
	04311	RPL Y+1*L(PBLANK1	05653	36010	05621		PREPARE EXIT
	04312	PBLANK2	05654	36010	05621		
	04313	ENT B7*00	05655	12700	00000		
	C4314	ENT B1*00	05656	12100	00000		
	04315	ENT A*W(PBLANK5)	05657	11030	05666		
	04316	ENT Q*W(PBLANK6)	05660	10030	05667		
	04317	EXIT	05661	61010	05621		
	04320	ENT A*W(PBLANK4)	05662	11030	05665		ERROR ROUTINE PARAMETER
	04321	RJP PERRR	05663	65000	06613		
	04322	JP PBLANK2	05664	61000	05654		
	04323	00001 PBLANK	05665	00001	05621		
	C4324	C4325	0	0	0		
	04325	PBLANK6	0	0	0		
	04326	COMMENT					
	04327	ROUTINE					
	C4330	COMMENT					
	04331	CALLING					
	C4332	RJP					
	04333	COMMENT					
	C4334	ENOEX*COL					
	04335	COMMENT					
	04336	ERROR					
	04337	COMMENT					
	C4340	NORMAL					
		ENTRY					
		STR A*W(PCOLRG)					
		STR B7*L(PCOLR1)					
		ENT B7*L(PCOLR)					
							LOC OF PARAMETERS

CARDS	L1	ID	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
		04341		ENT A*W(B7)	05674	11037	00000	T,Y TO A	
		04342		SEL SET*W(PCOLR4)	05675	50030	05714	OF IN AN ENT A INST	
		04343		STR A*W(\$+2)	05676	15030	05700		
		04344	PCOLR1	ENT B7*0	05677	12700	00000	ENT A WITH COUNTER VALUE	
		04345		0	05700	00000	00000	TEST FOR LINE OVERFLOW	
		04346		COM A*1290*+MORE	05701	04700	00201	TEST FOR LINE OVERFLOW	
		04347		JP PCOLR3	05702	61000	05710	TOO BIG, ERROR	
		04350		STR A*W(PCOLUMN)	05703	15030	06223	SET COUNTER	
		04351		RPL Y+)*L(IPCOLR)	05704	36010	05670		
		04352	PCOLR2	RPL Y+)*L(IPCOLR)	05705	36010	05670		
		04353		ENT A*W(PCOLRG)	05706	11030	05716		
		04354		EXIT A*W(PCOLRS)	05707	61010	05670		
		04355	PCOLR3	ENT A*W(PCOLRS)	05710	11030	05715	PARAMETER WORD FOR ERROR ROUTI	
								NE	
		04356		RJP PERORR	05711	65000	06613		
		04357		CL W(PCOLUMN)	05712	16030	06223		
		04360		JP PCOLR2	05713	61000	05705		
		04361	PCOLR4	ENT A*0	05714	11000	00000		
		04362	PCOLR5	00001 PCOLR	05715	00001	05670		
		04363	PCOLRG	0	05716	00000	00000		
		04364		COMMENT ROUTINE				\$ TO INCREMENT AND TEST	
		04365		COMMENT THE				COLUMN COUNTER	
		04366		COMMENT CALLING				SEQUENCE	
		04367		COMMENT RJP				PCOLIN	
		04370		COMMENT INDEX+NUMCOLS					
		04371		COMMENT ERROR					
		04372		COMMENT NORMAL					
		04373	PCOLIN	COMMENT					
		04374		ENTRY	05717	61000	00000		
		04375		STR A*W(PCOLINS)	05720	15030	05746		
		04376		STR B7*L(PCOLIN)	05721	16710	05726		
		04377		ENT B7*L(PCOLIN)	05722	12710	05717	LOC OF PARAMETERS	
		04400		ENT A*W(B7)	05723	11037	00000	T,Y	
		04401		SEL SET*W(PCOLIN3)	05724	50030	05744	OR IN AN ENT A INST	
		04402		STR A*W(\$+2)	05725	15030	05727		
		04403	PCOLIN	ENT B7*0	05726	12700	00000		
		04404		0	05727	00000	00000	VALUE OF INCREMENT TO A	
		04405		A00 A*W(PCOLUMN)	05728	20030	06223		
		04406		COM A*1290*+MORE	05731	04700	00201	TEST FOR LINE OVERFLOW	
		04407		JP PCOLIN2	05732	61000	05740	TOO MANY CHARACTERS, ERROR	
		04410		STR A*W(PCOLUMN)	05733	15030	06223	OK, STORE NEW COLUMN NUMBER	
		04411		RPL Y+)*L(IPCOLIN)	05734	36010	05717	PREPARE EXIT	
		04412	PCOLIN1A	RPL Y+)*L(IPCOLIN)	05735	36010	05717		
		04413		ENT A*W(PCOLINS)	05736	11030	05746		
		04414		EXIT A*W(PCOLIN4)	05737	61010	05717		
		04415	PCOLIN2	ENT A*W(PCOLIN4)	05740	11030	05745	PARAMETER WORD FOR ERROR ROUTI	
								NE	
		04416		RJP PERORR	05741	65000	06613		
		04417		CL W(PCOLUMN)	05742	16030	06223		
		04420		JP PCOLIN1A	05743	61000	05735	ERROR EXIT	
		04421	PCOLIN3	ENT A*0 PCOLIN	05744	11000	00000		
		04422	PCOLIN4	00001 PCOLIN	05745	00001	05717		
		04423	PCOLIN5	0	05746	00000	00000		

SPURT OUTPUT NO. 210  
J00\* 1/22/65

CAROS	L1	I0	LABEL	TA	STATEMENT	LOC	F	JK8	Y	NOTES
	04424			COMMENT	ROUTINE					\$
	04425			COMMENT	BUFFER					TO DEFINE THE OUTPUT
	04426			COMMENT	CALLING					ORIGIN
	04427			COMMENT	RJP					SEQUENCE
	04430			COMMENT	INOEKEY					PIMAGE
	04431			COMMENT	ERROR					
	04432			COMMENT	NORMAL					
	04433			COMMENT	ENTRY					\$
	04434		PIMAGE	STR A*W(PIMAGE3)		05747	61000	00000		
	04435			STR 87*L(PIMAGE1)		05750	15030	05772		
	04436			ENT 87*L(PIMAGE1)		05751	16710	05766		
	04437			ENT A*W(87)		05752	12710	05747		
	04440			SEL SET*W(PIMAGE2)		05753	11037	00000		
	04441			STR A*W(\$+1)		05754	50030	05771		
	04442			00 00		05755	15030	05756		ENT A WITH ADDRESS OF BUFFER
	04443			STR A*L(\$+2)		05756	00000	00000		
	04444			ENT 87*1270		05757	15010	05761		
	04445			ENT A*W(00+B7)		05760	12700	00177		
	04446			STR A*W(PBUF+87)		05761	11037	00000		
	04447			BJP 87*\$-2		05762				
	04450			RPL Y+1*L(PIMAGE)		05763	72700	05761		
	04451			RPL Y+1*L(PIMAGE)		05764	36010	05747		
	04452			ENT 87*00		05765	36010	05747		
	04453		PIMAGE1	ENT A*W(PIMAGE3)		05766	12700	00000		
	04454			EXIT		05767	11030	05772		
	04455			ENT A*80		05770	61010	05747		
	04456		PIMAGE2	O O		05771	11000	00000		
	04457		PIMAGE3	COMMENT		05772	00000	00000		
	04460			COMMENT	ROUTINE					
	04461			COMMENT	ROUTINE					
	04462			COMMENT	PRINTED					
	04463			COMMENT	CALLING					
	04464			COMMENT	RJP					
	04465			COMMENT	LINESTOP*LINESEBOT					
	04466			COMMENT	ERROR					
	04467			COMMENT	NORMAL					
	04470			COMMENT	ENTRY					
	04471			STR A*W(PFORASTOR)		05773	61000	00000		
	04472			STR 87*L(PFORBSTR)		05774	15030	06056		
	04473			ENT 87*L(PFORM)		05775	16710	06054		
	04474			ENT A*U(87)		05776	12710	05773		GET PARAMETER WO ADDRESS
	04475			A00 A*1		05777	11027	00000		GET NO OF BLANK LINES AT TOP
	04476			STR A*W(TOPLINE)		06000	20000	00001		
	04477			ENT A*L(B7)		06002	11017	00000		FORM TOP LINE NO.
	04500			STR A*W(BOTMARG)		06003	15030	05225		GET NO OF BLANKS AT BOTTOM
	04501			A00 A*W(TOPLINE)		06004	20030	06226		
	04502			COM A*PAGE SIZE+*YMORE		06005	04700	0103		CHECK FOR MARGINS EXCEEDING
	04503			JP PFORMERR		06006	61000	05052		PAGE SIZE - ERROR
	04504			ENT A*PAGE SIZE		06007	11000	00102		
	04505			SUB A*W(BOTLINE)		06010	21030	06225		
	04506			STR A*W(BOTLINE)		06011	15030	06227		FORM BOTTOM LINE NO.
	04507			ENT A*W(PEXTINT)		06012	11030	06222		SET UP PRINT INTERRUPT

SPURT OUTPUT NO. 210  
J00•1/22/65

CAROS	LI TO LABEL	TA STATEMENT	LOC	F JKB Y	NOTES
*	04510	STR A•W(23)	06013	15030 00023	
*	04511	ENT A•1	06014	11000 00001	
*	04512	STR A•W(STATUS)	06015	15030 06237	INITIALIZE STATUS
*	04513	ENT A•W(LINCNT)	06016	11030 06230	
*	04514	SUB A•W(TOPLINE)*ANOT	06017	21530 06226	TEST FOR PAGE TOPPEO
*	04515	JP PFORMERR-1	06020	61000 06051	
*	04516	ENT A•PAGE SIZE	06021	11000 00102	COMPUTE PAGESIZE-LINCNT
*	04517	SUB A•W(LINCNT)	06022	21030 06230	
*	04520	A00 A•W(TOPLINE)	06023	06030 06226	PLUS TOPLINE=NO OF LINES
*	04521	COM A•PAGE SIZE*YLESS	06024	04600 00102	MODULE PAGE SIZE
*	04522	JP \$+3	06025	61000 06030	
*	04523	SUB A•PAGE SIZE	06026	21000 00102	
*	04524	JP \$-3	06027	61000 06024	
*	04525	COM A•77*YMORE	06030	04700 00077	
*	04526	RJP PScriBSS	06031	65000 06163	
*	04527	LSH A•180	06032	06000 00022	
*	04530	SEL SET•W(SPRINTWD1)	06033	50030 06231	CONSTRUCT PRINT ORDER
*	04531	STR A•W(PSCRIBCI)	06034	15030 06232	
*	04532	ENT A•W(TOPLINE)	06035	11030 06226	
*	04533	STR A•W(LINCNT)	06036	15030 06230	RESET LINCNT TO TOP OF PAGE
*	04534	ENT A•1	06037	11000 00001	RESET PCOLUMN
*	04535	STR A•W(PCOLUMN)	06040	15030 06223	
*	04536	NO-OP	06041	12000 00000	
*	04537	ENT A•W(STATUS)*ANOT	06042	11530 06237	WAIT FOR COMPLETION
*	04540	JP \$-2	06043	61000 06041	
*	04541	SUB A•1*AZERO	06044	21400 00001	CHECK OK STATUS
*	04542	JP PFORMERR*STOP	06045	61400 06052	
*	04543	CL W(STATUS)	06046	16030 06237	CLEAR STATUS WORD
*	04544	EX-FCT PRINTC•W(PSCRIBCI)	06047	13170 06232	ISSUE WITH NO BUFFER
*	04545	OUT PRINTC•W(PSCRIBSSB1)	06050	74170 06241	
*	04546	RPL Y+1*L(PFORMI)	06051	36010 05773	
*	04547	RPL Y+1*L(PFORMI)	06052	36010 05773	
*	04550	ENT A•W(PFORASTOR1)	06053	11030 06056	
*	04551	PFORBSTR	06054	12700 00000	
*	04552	ENT B7•0	06055	61010 05773	
*	04553	PFORASTOR 0 0	06056	00000 00000	
*	04554	COMMENT COMMENT			\$ TO PRINT ONE LINE AFTER SPACIN
*	04555	COMMENT ROUTINE			G OR GOING
*	04556	COMMENT TO			TOP OF NEXT PAGE. IMAGE ADDRES
*	04557	COMMENT CALLING			SEQUENCE
*	04560	COMMENT RJP			PSCRIB
*	04561	COMMENT EJECT•SPACING			
*	04562	COMMENT ERROR			
*	04563	COMMENT NORMAL			
*	04564	PR1NTC MEANS C3			
*	04565	ENTRJP PSAVE	06057	61000 00000	
*	04566	ENT A•W(PEXTINT)	06060	65000 06563	
*	04567	STR A•W(23)	06061	11030 06222	SET UP PRINT INTERRUPT
*	04570	ENT B7•L(PSCRIBI)	06062	15030 00023	
*	04571	ENT A•U(B71)*ANOT	06063	12710 06057	GET PARAMETER WO ADDRESS
*	04572		06064	11527 00000	TEST FOR PAGE TOPPING

SPURT OUTPUT NO. 210  
JDD\* 1/22/65

CARDS	L1	ID	LABEL	TA STATEMENT	LOC			F	JKB	Y	NOTES
					ENT	PRSCRIBC	06065				
•	04573		PSCRIBA	ENT A*W(BOTLINE1	06066	11030	06227	YES- COMPUTE LINES TO SKIP			
•	04574			SUB A*W(LINCNT1	06067	21030	06230	FOR TOP OF NEXT PAGE			
•	04575			ADD A*W(BOTMARG1	06070	20030	06225				
•	04576		PSCRIBF	ADD A*W(TOPLINE1	06071	20030	06226				
•	04577			COM A*77*YMORE	06072	04700	00077				
•	04600			RJP PSCRIBSS	06073	65000	06163				
•	04601		PSCRIBB	A*1BD LSH	06074	06000	00022				
•	04602			SET*W(PRINTWD1)	06075	50030	06231	INSERT IN PRINT FUNCTION NO			
•	04603										
•	04604			STR A*W(PSCRIBC1	06076	15030	06232				
•	04605			ENT A*W(TOPLINE1	06077	11030	06226	RESET LINE COUNT TO TOLINE			
•	04606		PSCRIBF	STR A*W(LINCNT1	06100	15030	06230				
•	04607			ENT B7*0	06101	12700	00000	CREATE PACKED PRINT BUFFER			
•	04610		PSCRIBH	ENT B5*LIPScriBD1	06102	12510	06233				
•	04611			ENT B6*4	06103	12600	00004				
•	04612		PSCRIBF	ENT A*0	06104	11000	00000				
•	04613			BSK B7*129D	06105	71700	00201				
•	04614		PSCRIBH	ENT Q*W(PBUF+B71*SKIP	06106	10137	07274	PACK CHARS FROM PBUF			
•	04615			JP PSCRIBJ	06107	61000	06116				
•	04616		PSCRIBJ	LSH Q*24D	06110	05000	00030				
•	04617			LSH AQ*6	06111	07000	00006				
•	04620		PSCRIBH	BJP B6*PSCRIBH+2	06112	72600	06105				
•	04621			STR A*W(B51	06113	15035	00000	STORE INTO PACKED BUFFER			
•	04622		PSCRIBI	BSK B5*-1	06114	71500	77776				
•	04623			JP PSCRIBH	06115	61000	06103				
•	04624		PSCRIBJ	LSH A*6	06116	06000	00006	LEFT JUSTIFY A REG			
•	04625			BJP B6*-1	06117	72600	06116				
•	04626		PSCRIBI	STR A*W(B51	06120	15035	00000				
•	04627			ENT A*1	06121	11000	00001				
•	04630		PSCRIBH	STR A*W(TCOLUMN1	06122	15030	06223	RESET COLUMN COUNTER TO 1			
•	04631			ENT BO*PSCRBUF	06123	12000	26134	SWITCH TO SKIP PRINTING			
•	04632		PSCRIBF	NO-OP	06124	12000	00000				
•	04633			ENT A*W(STATUS1*ANOT	06125	11530	06237	LOOP TILL PRINT COMPLETE			
•	04634		PSCRIBI	JP \$-2	06126	61000	06124				
•	04635			SUB A*1*AZERO	06127	21400	00001	TEST FOR NORMAL COMPLETION			
•	04636		PSCRIBH	JP PSCRIBERR	06130	61000	06162	NO			
•	04637			CL WSTATUS1	06131	16030	06237				
•	04640		PSCRIBF	ENT PRINTC(W(PSCRIBC1	06132	06132	13170	06232			
•	04641			OUT PRINTC(W(PSCRIBD1	06133	74170	06233				
•	04642		PSCRBUF	ENT Q*W(TWENTYSIX1	06134	10030	06224				
•	04643			ENT A*L(PSCRIBD1	06135	11010	06233	EXAMINE LAST BUFFER			
•	04644		PSCRIBF	STR A*U(PACKBUFF1	06136	15020	07205				
•	04645			COM A*PREGION+2*YMORE	06137	04700	37210				
•	04646		PSCRIBG	RPL Y-Q*W(PSCRIBD1*SKIP	06140	35130	06233				
•	04647			RPL Y+Q*W(PSCRIBD1	06141	34030	06233				
•	04650		PSCRIBG	STR A*U(PACKBUFF1	06142	15010	07205				
•	04651			RPL Y+1*L(PSCRIB1	06143	36010	06057	YES- ADJUST EXIT LINE			
•	04652		PSCRIBG	RPL Y+1*L(PSCRIB1	06144	36010	06057				
•	04653			RJJP PRESTORE	06145	65000	05576				
•	04654		PSCRIBC	EXIT ENT A*W(BOTLINE1	06146	61010	06057				
•	04655			SUB A*W(LINCNT1	06147	11030	36227	IF BOTLINE-LINCNT GREATER			
•	04656		PSCRIBC	SUB 21030 06230	06150	21030	06230	THAN NO OF LINES TO SHIP, FIVE			

SPURT OUTPUT NO. 210  
JDD\*1/22/65

CARDS	L1	I0	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
•	04657			COM A*L(187)*YLESS	06151	04617	00000		ELSE GO TO TOP PAGE
•	04660			JP PSCRIBA+1	06152	61000	06070		
•	04661			ENT A*L(187)	06153	11017	00000		BUMP LINE COUNTER
•	04662			RPL A+Y*W(LINCNT)	06154	24030	06230		
•	04663			ENT A*L(187)	06155	11017	00000		GET NO OF SPACES
•	04664			LSH A*18D	06156	06000	00022		
•	04665			SET*W(PRINTWD)	06157	50030	06231		INSERT IN PRINT FUNCTION #0
•	04666			STR A*W(PSCRIBC)	06160	15030	06232		
•	04667			JP PSCRIBF	06161	61000	06101		GO TO PRINT OUT
•	04670			JP PSCRIBG*STOP	06162	61400	06144		
•	04671			ENTRY	06163	61000	00000		
•	04672			SUB A*77	06164	21000	00077		
•	04673			COM A*77*YMORE	06165	04700	00077		
•	04674			JP \$-2	06166	61000	06164		
•	04675			ENT B7*A	06167	12770	00000		
•	04676			NO-OP	06170	12000	00000		
•	04677			ENT A*W(STATUS)*ANOT	06171	11530	06237		
•	04700			JP \$-2	06172	61000	06170		
•	04701			SUB A*1*AZERO	06173	21000	00001		
•	04702			JP PSCRIBERR	06174	61000	06162		
•	04703			CL W(STATUS)	06175	16030	06237		
•	04704			EX-FCT PRINTC*W(PSCRIBSSA)	06176	13170	06240		
•	04705			OUT PRINTC*W(PSCRIBSSB)	06177	74170	06241		
•	04706			ENT A*87	06200	11007	00000		
•	04707			EXIT	06202	61010	06163		
•	04710			PSCRINT	06203	61000	00000		PRINT INTERRUPT ROUTINE
•	04711			STR A*W(PSCRATOR)	06204				

SPURT OUTPUT NO. 210  
J00\*1/22/65

CAROS	LI ID	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	04742	PSCASTOR	0 0	06234	00000	00000		
	04743	PSCQSTOR	0 0	06235	00000	00000		
	04744	STATSTOR	0 0	06236	00000	00000		
	04745	STATUS	0 1	06237	00000	00000		
	04746	PSCRIBSSA	12770 00001	06240	12770	00001		
	04747	PSCRIBSSB	U-TAG 77777	06241	06242	06242		
	04750	PSCRIBSSC	EQUALS 660	06242	77777	77777		
	04751	PAGESIZE	COMMENT					
	04752	COMMENT	SUBROUTINE					
	04753	COMMENT	ENTRY					
	04754	COMMENT	COMMENT OF					
	04755	PENTRY	ENTRY	06243	61000	00000		
	04756	PENTRY	RJP PSAVE	06244	65000	06564		
	04757		ENT B7*L(PENTRY)	06245	12710	06243		
	04760		ENT B7*L(B7-21)	06246	12717	77775	GET ADDRESS OF MAIN CALLER	
	04761		ENT A*W(B71)	06247	11037	00000		
	04762		SEL SETW(GETAO0)	06250	50030	06264		
	04763		STR A*W(PENTA+1)	06251	15030	06261		
	04764		ENT A*L(1+B7)*ANOT	06252	11517	00001		
	04765		JP PENTA	06253	61000	05260		
	04766		STR A*W(\$+21)	06254	15030	06256		
	04767		RJP PCOLR	06255	65000	05670		
	04770		0 0	06256	00000	00000		
	04771		JP \$+2	06257	61000	05261		
	04772		RPL Y+1*L(PENTRY)	06260	36010	05243		
	04773	PENTA	0 0	06261	00000	00000		
	04774		ENT B1*L(PCOLUMN)	06262	12110	06223		
	04775		EXIT	06263	61010	06243		
	04776		ENT B6*0	06264	12600	00000		
	04777	GETADO	ENTRY	06265	61000	00000		
	05000	PLAYUP	STR B7*L(PLAYB\$TOR)	06266	16710	06315	SAVE B-REGS	
	05001		STR B6*L(PLAYB\$TOR+1)	06267	16610	06316		
	05002		STR B5*L(PLAYB\$TOR+2)	06268	16510	06317		
	05003		CLEAR 1300*LAYUP\$TOR	06271	70100	00202		
	05004			06272	16030	06322		
	05005		ENT B7*L(PLAYUP)	06273	12710	06265		
	05006		ENT B6*U(B7)	06274	12527	00000		
	05007		ENT B7*L(B7)	06275	12717	00000		
	05010		STR B6*L(PLAYUP)	06276	16610	06301		
	C5011		ENT B6*0	06277	12600	00000		
	05012		ENT B5*0	06278	12500	00000		
	C5013	PLAYUPA	ENT Q*W(0+B6)	06301	10036	20000	BRING 1ST WORD TEST FOR 0	
	05014		A00 Q*0*QNOT	06302	26500	00000		
	C5015		JP PLAYUPB	06303	61000	06312		
	05016		CL A*	06304	11000	00000		
	05017		LSH AQ*6*ANOT	06305	07500	00006	IF NOT GET NEXT \$D	
	05020		JP PLAYUPA+1	06306	61000	06302		
	C5021		STR A*W(LAYUP\$TOR+B51)	06307	15035	05322	STORE IN NEXT SLOT	
	05022		BSK 85*LAYUPLMT	06310	71500	00202		
	05023		JP PLAYUPA+1	06311	61000	06302		

PRINTOUT		SPURT OUTPUT NO. 210 J00*1722/65		LOC	F	JKB Y	NOTES
IROS	LI TO LABEL	TA STATEMENT					
	05024	PLAYUPB	BSK B6*B7-1	06312	71607	77776	TILL ALL WORDS DONE
	05025		JP PLAYUPA	06313	61000	06301	SAVE NUMBER OF CHARACTERS
	05026		STR B5*W(CHARNO)	06314	16530	06525	RESTORE B-REGS
	05027	PLAYBSTOR	ENT B7*0	06315	12700	00000	
	05030		ENT B6*0	06316	12600	00000	
	05031		ENT B5*0	06317	12500	00000	
	05032		RPL Y+1*L(PLAYUP)	06320	36010	06265	
	05033		EXIT	06321	61010	06265	NORMAL EXIT
	05034	LAYUPLMT	EQUALS 130D	06322	00000	00000	
	05035	LAYUPSTOR	RESERVE 131D	06525	00000	00000	
	05036	CHARNO	RESERVE 1	06526	61000	00000	
	05037	PFRACSTOR	ENTRY A*W(BETA)*ANOT	06527	11530	07170	IF BETA GRTR 0,
	05040		JP PFRACB	06530	61000	06560	
	05041		ENT A*75	06531	11000	00075	
	05042		STR A*L(PBUF+BI)	06532	15011	07274	
	05043		BSK B1*1290	06533	71100	00201	
	05044		JP \$+2	06534	61000	06536	
	05045		JP PFRACERR	06535	61000	06555	
	05046		ENT B4*0	06536	12400	00000	
	05047		ENT B5*0	06537	12500	00000	
	05050		ENT C5051 PFRACAA	06540	10035	07200	UNPACK FRACTION
	05052		CL A*	06541	11000	00000	
	05053		LSH AQ*6	06542	07000	00006	
	05054		STR A*L(PBUF+BI)	06543	15011	07274	
	05055		BSK B1*1290	06544	71100	00201	
	05056		JP \$+2	06545	61000	06547	
	05057		JP PFRACERR	06546	61000	06555	
	05060		RPL Y-1*W(BETA)*ANOT	06547	37530	07170	STORE BETA DIGITS (K)
	05061		JP PFRACB	06548	61000	06560	WHEN DONE, EXIT
	05062		BSK B4*4	06550	71400	00004	
	05063		JP PFRACAA+1	06552	61000	06541	
	05064		BSK B5*1	06553	71500	00001	
	05065		JP PFRACA	06554	61000	06540	
	05066	PFRACERR	ENT A*W(PFRACERR 1)	06555	11030	06562	
	05067		RJP PERRORR	06556	65000	06613	
	05070		EXIT RPL Y+1*L(PFRACSTOR)	06557	61010	06526	
	05071	PFRACB	EXIT 00001 PFRACSTOR	06556	36010	06526	
	05072		COMMENT ROUTINES	06562	61010	06526	
	05073	PFRACERR1		06562	00001	06526	TO SAVE AND RESTORE ALL REGS
	05074						
	05075	PSAVE	ENTRY STR A*W(PASTORI)	06563	61000	00000	
	05076		STR Q*W(PQSTORI)	06564	15030	06611	
	05077		STR B1*L(PRESTORE+1)	06565	14030	06612	
	05100		STR B2*L(PRESTORE+2)	06566	16110	06577	
	05101		STR B3*L(PRESTORE+3)	06567	16210	06600	
	05102		STR B4*L(PRESTORE+4)	06570	16310	06601	
	05103		STR B5*L(PRESTORE+5)	06571	16410	06602	
	05104		STR B6*L(PRESTORE+6)	06572	16510	06603	
	05105		STR B7*L(PRESTORE+7)	06573	16610	06604	
	05106			06574	16710	06605	
	05107			06575	61010	06563	

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CARD	LI	IO	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	05110		PRESTORE	ENTRY	06576	61000	00000		
	05111			ENT B1*0	06577	12100	00000		
	05112			FNT B2*0	06600	12200	00000		
	05113			ENT B3*0	06601	12300	00000		
	05114			ENT B4*0	06602	12400	00000		
	05115			ENT B5*0	06603	12500	00000		
	05116			ENT B6*0	06604	12600	00000		
	05117			ENT B7*0	06605	12700	00000		
	05120			ENT A*W(PASTOR1	06606	11030	06611		
	05121			ENT Q*W(PQSTOR1	06607	10030	06612		
	05122			EXIT	06610	61010	06576		
	05123		PASTOR	0 0	06611	00000	00000		
	05124		PQSTOR	0 0	06612	00000	00000		
	05125			COMMENT ROUTINE					
	05126			COMMENT CODE					
	05127			COMMENT					
	05130		PERRORR	ENTRY	06613	61000	00000		
	05131			STR A*LL(PERRORR2)	06614	15010	06623	LOC	
	05132			RSH A*150	06615	02000	00017		
	05133			SEL SET*W060	06616	50000	06060		
	05134			STR A*W(PERROR 1)	06617	15030	06654		
	05135			RJP PIMAGE	06620	65000	05747	DEFINE NEW BUFFER	
	05136			0 PERROR 4	06621	00000	06651		
	05137			NO-OP	06622	12000	00000		
	05140		PERRORR2	ENT Q*W(L001)	06623	10010	00000	GET LOC OF CALLER	
	05141			CL A*	06624	11000	00000		
	05142			LSH Q* 150	06625	05000	00017		
	05143			LSH A*3	06626	06000	00003		
	05144			LSH AQ* 3	06627	07000	00003		
	05145			A00 Q*0*QZERO	06630	26400	00000		
	05146			JP \$-3	06631	61000	06626		
	05147			SEL SET*N(SIXTIES1	06632	50030	07166		
	05150			STR A*W(PERROR15)	06633	15030	06660		
	05151			RJP PSCRIB	06634	65000	06057	PRINT	
	05152			I 0	06635	00001	00000		
	05153			NO-OP	06636	12000	00000		
	05154			RJP PLAYUP	06637	65000	06265	SPREAD OUT MESSAGE	
	05155			U-TAG PERROR4*80	06640	06640	00010		
	05156			ENT A*040 3	06641	11000	00403	ADD CR AND LF	
	05157			STR A*W(LAYUPSTOR4*001	06642	15030	06372		
	05160			NO-OP	06643	12000	00000		
	05161			JP \$-1*KEYOUT*ACTIVEOUT	06644	53100	06643		
	05162			OUT KEYOUT*W(PERROR91	06645	74130	06663		
	05163			NO-OP	06646	12000	00000		
	05164			JP \$-1*KEYOUT*ACTIVEOUT	06647	63100	06646		
	05165			EXIT	06650	61010	06613		
	05166		PERROR4	F0 3*ERROR TYPE	06651	12272	72427		
	05167		PERROR1	F0 0 0 AT LOCATION	06652	05313	52512		
	05170			F0 3* AT LOCATION	06653	05050	50505		
					06654	00000	00000		
					06655	05050	53105		
					06656	21241	00631		
					06657	16242	30505		

\*\*\*\*\* PRINTOUT \*\*\*\*\*

SPURT OUTPUT NO. 210

DDA\*1/22/65

CARD	L1	ID	LABEL	TA	STATEMENT	LOC	F	JK8	Y	NOTES
*	05171		PERR05	0	00000	06660	00000	00000		
*	05172		PERR08	77777	PERR04+260*PERR04	06661	77777	00000		
*	05173		PERR09	U-TAG	LAYUPSTOR+360*LAYUPSTOR	06662	06703	06651		
*	05174		BINOECLNT	JP 0		06663	06366	06322	EXIT ENTRY	
*	05175			STR B1*U(BINOECLNT31		06664	61000	00000	SAVE B REGISTERS	
*	05176			STR B2*L(BINOECLNT31		06665	16120	06714		
*	05177			STR B7*L(BINOECLNT41		06666	16210	06714		
*	05200			CL B2		06667	16710	06712		
*	05201			ENT B1*1		06670	12200	00000	INITIALIZE B REGS FOR COUNT	
*	05202			STR B1*W1SIGN1		06671	12100	00001		
*	05203					06672	16130	07173	STORE 1 1B11 IN SIGN AS NEG SI	
*	05204			ENT Q*W1INTEGER1*QNEG		06673	10330	07171	GN TEST IF NUMBER TO BE CONV1 IS NEG	
*	05205			RPL Y-1*W1SIGN1*SKIP		06674	37130	07173	POS RESET SIGN TO ZERO-GO TO A	
*	05206			CP Q		06675	14000	00000	NEG LEAVE SIGN-COMPLEMENT NUMBER	
*	05207		BINOECLNT1	CL W10INTEGER+B11		06676	16031	07176	MAIN LOOP-INITIALLY CLEAR OUTP UT	
*	05210		BINOECLNT2	CL A		06677	11000	00000	CLEAR A FOR DIVIDE	
*	05211			DIV 12		06700	23000	00012	NEC DEC DIGIT REMAINS IN A	
*	05212			ADD A*60		06701	20000	00060	INCORPORATE FLDATA BITS	
*	05213			RPT B2		06702	70002	00000	VARIABLE SHIFT TO INCORP FLOAT A	
*	05214			LSH A*6		06703	06000	00005	DIGIT IN RT. JUSTIFIED OUTPUT	
*	05215			RSE SET*W10INTEGER+B11		06704	54031	07176	ADD IN NEW 6-BIT CODE	
*	05216			BSK B2*4		06705	71200	00004	OUTPUT WORD FILLED YET IS CODE SI	
*	05217			JP BINOECLNT2		06706	61000	06677	NO-GET ANOTHER CODE	
*	05220			BJP B1*BINOECLNT1		06707	72100	06676	YES-OUTPUT COMPLETED-IF NO CODE NEXT	
*	05221			ENT B1*U(BINOECLNT31		06710	12120	06714	YES-RESTORE B REGS	
*	05222		BINOECLNT4	ENT B2*L(BINOECLNT31		06711	12210	06714		
*	05223			B7*0		06712	12720	00000	AND EXIT	
*	05224			JP BINOECLNT		06713	61000	06664	SAVE B REGISTERS HERE	
*	05225		BINDECINT3	O 0		06714	00000	00000	ENTRY EXIT	
*	05226		BINOCFLD	JP 0		06715	61000	00000		
*	05227			STR B7*L(BINOCFLD31		06716	16710	06731	CLEAR B7 FOR COUNT	
*	05230			CL B7		06717	12700	00000	ENTER INPUT WORD	
*	05231		BINOCFLD1	ENT Q*W1INTEGER1		06720	10030	07171	MAIN LOOP SET WORD INITIALLY 1	
*	05232			CL A		06721	11000	00000	0 ZER	
*	05233		BINOCFLD2	LSH A*3		06722	06000	00003	ALLOW ROOM FOR FLDATA BITS	
*	05234			LSH AQ*3		06723	07000	00003	INSERT 3BIVARY BITS10CTAL OIS ITI	
*	05235			ADD A*60*ANEG		06724	20700	00060	INSERT FLDATA CODE TEST IF WORD FIL	
*	05236			JP BINOCFLD2		06725	61000	05722	NOT FILLED INSERT NEXT DIGIT	
*	05237			STR A*W10INTEGER+B71		06726	15037	07176	FILLED-STORE OUTPUT	
*	05240			BSK B7*1		06727	71700	00001	ALL OUTPUT COMPLETE	

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CAROS	L1	ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
		05241	BINOCFL03	JP	BINOCFL01	06730	61000	06721		NO- MAKE 2NO WORD
		05242		ENT	B7*0	06731	12700	00000		
		05243		JP	BINOCFL0	06732	61000	06715		AND EXIT
		05244	BINDECfra	ENTRY		06733	61000	00000		
		05245		CL	B7	06734	12700	00000		SET BREG
		05246		ENT	Q* 1	06735	10000	00001		FIND IF NO IS + OR -
		05247		ENT	A*W(FRACTION)*APOS	06736	11530	07172		SET SIGN APPROPRIATELY
		05250		STR	A*A*ANOT	06737	15540	00000		AND SET NUMBER POSITIVE
		05251		ENT	Q*0	06740	10000	00000		
		05252		STR	Q*W(SIGN)	06741	14030	07173		
		05253		RSH	AQ*290	06742	03000	00035		INITIALIZE
		05254	BINDECfra1	ENT	A*0	06743	11000	00000		SET OUTPUT WORD TO ZERO
		05255	BINDECfra2	LSH	A*6	06744	06000	00006		RESET OUTPUT WORD FOR NEXT CO
		05256		STR	A*W1I0FRACTION+B71	06745	15037	07200		AND STORE
		05257		RSH	AQ*1	06746	03000	00001		SET Q FOR MUL OPERATION
		05260		MUL	2L	06747	22000	00024		PRODUCT AT B29
		05261		SEL	SET*60	06750	50000	00060		INSERT FIELD BITS
		05262		RSE	SET1I0FRACTION+B71*ANEG	06751	54737	07200		INSERT NEW CODE WORD FILLED
		05263		JP	BINDECfra2	06752	61000	05744		NO-KEEP FILLING SAME WORD
		05264		BSK	B7*1	06753	71700	00001		YES-ARE BOTH WORDS FILLED
		05265		JP	BINDECfra1	06754	61010	06733		NO-DO SECOND WORD
		05266		EXIT		06755	06756	61000		
		05267	COFFIX	ENTRY		06757	16710	07012		
		05270		STR	B7*L1COFXSTOR1	06758	16210	07010		
		05271		STR	B2*L1COFFTEM1	06760	16310	07011		
		05272		STR	B3*L1COFFTEM2	06761	16310	07011		
		05273		CL	W(FXCODE1	06762	16030	0165		INITIALIZATION
		05274		CL	W(SIGN1	06763	16030	07173		
		05275		ENT	B2*L1COFFIX1	06764	12210	05756		B2 CONTAINS LOC OF ARG + GAMMA
		05276		ENT	B3*UI(B2)	06765	12322	00000		
		05277		ENT	A*W(B3)*ANEG	06766	11733	00000		ARGUMENT INTO A TEST + JR -
		05300		JP	COFF1	06767	61000	06772		+ CONTINUE
		05301		STR	A*W1FXCODE1	06770	15030	07165		
		05302		CP	A*	06771	15040	00000		-
		05303	COFF1	CL	Q*	06772	10000	00000		
		05304		ENT	B2*LIB21	06773	12212	00000		
		05305		RSH	AQ*B2	06774	03002	00000		
		05306		STR	A*W1INTEGER1	06775	15030	07171		
		05307		LSH	Q*29D	06776	05000	00035		
		05310		STR	Q*W(FRACTION1	06777	14030	07172		
		05311		ENT	BINDECINT	07000	65000	06664		CONVERT BIN INT TO FLDIA
		05312		RJP	BINDECfra	07001	65000	06733		CONVERT BIN FRAC TO FLDIA
		05313		RJP	COFRND	07002	65000	07053		
		05314		RJP	SUPZRO	07003	65000	07014		
		05315		U-TAG	I0INTEGER*2	07004	07176	00002		
		05316		ENT	A*W(FXCODE1)*AZERO	07005	11430	07165		
		05317		STR	A*W(SIGN1	07006	15030	07173		
		05320		RPL	Y+1*L1COFFIX1	07007	36010	06756		
		05321	COFFTEM1	ENT	B2*0	07010	12200	00000		
		05322	COFFTEM2	ENT	B3*0	07011	12300	00000		
		05323	COFXSTOR	ENT	B7*0	07012	12700	00000		

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CARDS	LI	LO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
					EXIT	07013	61010	06756		
			05324	SUPZRO	ENTRY B6*L(SUPB\$TOR)	07014	61000	00000		
			C5326		STR B7*L(SUPB\$TOR+1)	07015	16610	07050		
			05327		ENT B7*L(SUPZRO)	07016	16710	07051		
			05330		RPL Y+1*L(SUPZRO)	07017	12710	07014		
			05331		ENT B6*L(B7)	07020	36010	07014		
			C5332		STR B6*L(SUPZRO3)	07021	12617	00000	NO OF WROS	
			05333		ENT B6*I	07022	16610	07036		
			05334		ENT B7*U(B7)	07023	12500	00001		
			05335	SUPZRO1	ENT Q*N(B7)	07024	12727	00000	ADDRESS	
			C5336	SUPZRO2	CL A*	07025	10037	00000	BRING NEXT (1ST) WORD	
			05337		LSH AQ*6	07026	11000	00000		
			05340		COM A*6*I*YMORE	07027	07000	00006	MOVE 1 DIGIT INTO A	
			05341		JP SUPZRO4	07030	04700	00061	TEST FOR EQUAL TO 60	
			C5342		AD0 Q*0*QZERO	07031	61000	07043	IF NOT, JUMP TO CLEAN-UP	
			05343			07032	26400	00000	IF SO, TEST FOR WORD EXHAUSTED	
			05344		JP SUPZRO2	07033	61000	07026	IF MORE DIGITS, RETURN TO TEST	
			C5345		CL W(B7)	07034	16037	00000		
			05346		ENT B7*I*B7	07035	12707	00001	IF NOT, BUMP ADDRESS OF WORD	
			05347	SUPZRO3	BSK B6*NIL	07036	71600	00000	TEST FOR ALL WORDS DONE	
			C5350		JP SUPZRO1	07037	61000	07025	RETURN FOR NEXT WORD	
			05351		ENT A*60	07040	11000	00060	IF WORDS ALL ZERO, PRINT 1	
			05352		ENT B7*B7-1	07041	12707	77776		
			05353		JP SUPZRO5	07042	61000	07047		
			C5354	SUPZRO4	ADD Q*0*QNOT	07043	26500	00000	WHEN FIND NON-ZERO	
			05355		JP SUPZRO5	07044	61000	07047		
			05356		LSH AQ*6	07045	07000	00006	MOVE REST OF WORD TO A	
			05357		ENT B7*B7-1	07046	61000	07043		
			C5360	SUPZRO5	JP SUPZRO4	07047	15037	00000	STORE BACK IN PROPER SLOT	
			05361	SUPB\$TOR	STR A*N(B7)	07050	12600	00000		
			05362		ENT B6*NIL	07051	12700	00000		
			05363		ENT B7*0	07052	61010	07014		
			C5364	COFRND	EXIT	07053	61000	00000		
			05365		ENTRY A*90	07054	11000	00011		
			05366		SUB A*N(BETA)	07055	21030	07170		
			05367		ENT B7*A	07056	12770	00000	PUT 9-BETA IN B7	
			C5370		ENT Q*N(10FRACTION+1)	07057	10030	07201	BRING FLOATA FRACTION TO A	
			05371		ENT A*N(10FRACTION)	07060	11030	07200		
			05372		CL W(10FRACTION)	07061	16030	07200		
			05373		ENT A*90	07062	16030	07201		
			C5374		CL *W(HIBIT)	07063	52030	07157		
			05375	COFRND1	SEL B7*C0FRND2	07064	72700	07066	SUBTRACT 1 FROM B7	
			C5376		JP COFRND3	07065	61000	07070	WHEN B7 IS 0, STOP SHIFTING	
			05377	COFRND2	RSH AQ*6	07066	03000	00006	SHIFT OFF 1 DIGIT	
			C5400		JP COFRND1	07067	61000	07064	RETURN TO TEST B7	
			05401	COFRND3	LSH AQ*540	07070	07000	00066	PUT BETA 1TH DIGIT IN A1-6	
			05402		COM A*N(SIXTYFIVE)*MORE	07071	04730	07161		
			05403		JP COFRND5	07072	61000	07102	IF MORE THAN 4, GO TO ADD 1	
			C5404		SEL CL *W(M6L)	07073	52030	07162	IF LESS THAN 5, CLEAR IT	
			05405	COFRND4	LSH AQ*1*ANEQ	07074	07700	00001	LEFT JUSTIFY FRACTION	
			05406		JP COFRND4	07075	61000	07074		

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CARDS		L1	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
•	05407			COFRN041	RSH	AQ*1	07076	03000	00001	PUT HIGH ORDER BIT BACK ON	
•	05410				STR	A*W10FRACTION)	07077	15030	07200	STORE AWAY	
•	05411				STR	Q*W(M10FRACTION*1)	07100	14030	07201		
•	05412			COFRN05	JP	COFRN06!	07101	61000	07141		
•	05413				SEL	CL*(M6L1	07102	52030	07162	IF MUST ADD 1, CLEAR EXTRA DIGIT	
•	05414				LSH	AQ*540	07103	07000	00066	SHIFT LOW-ORDER DIGIT TO TOP 0	
•	05415				COM	A*W(SEVENTYONE)*YMORE	07104	04730	07163	F A TEST EQUAL TO 71	
•	05416				JP	COFRN051*ANOT	07105	60500	07112	IF SO, RETURN TO TEST NEXT 013	
•	05417				JP	COFRN06*AZERO	07106	60400	07122	IF NOT, TEST FOR FRACTION ALL 0	
•	05420				A00	A*W(BIT5)	07107	20030	07164	IF NOT, ADD 1 TO DIGIT	
•	05421				LSH	AQ*6	07110	07000	00006	RIGHT JUSTIFY FRACTION	
•	05422			COFRN051	JP	COFRN04	07111	61000	07074		
•	05423				JP	COFRN05*ANEG	07112	60700	07102	DIGIT MAY HAVE HAD HIBIT	
•	05424				SEL	SET*W(HIBIT)	07113	50030	07157	CLEARED, SO RESTORE AND	
•	05425				COM	A*W(SEVENTYONE)*YMORE	07114	04730	07163		
•	05426				JP	COFRN05	07115	61000	07102		
•	05427				A00	A*W(BIT5)	07116	20030	07164		
•	05430			COFRN052	LSH	AQ**ANEG	07117	07700	00006		
•	05431				JP	COFRN052	07118	61000	07117		
•	05432				JP	COFRN041	07121	61000	07077		
•	05433			COFRN06	ENT	Q*W10INT(TEGER+1)	07122	10030	07177		
•	05434				ENT	A*W10INT(TEGER+1)	07123	11030	07176		
•	05435				JP	COFRN07+1	07124	61000	07126		
•	05436			COFRN07	SEL	CL*(M6L1)	07125	52030	07162		
•	05437				LSH	AQ*510	07126	07000	00066		
•	05440				COM	A*W(SEVENTYONE)*YMORE	07127	04730	07163		
•	05441				JP	COFRN07	07130	61000	07125		
•	05442				A00	A*W(BIT5)	07131	20030	07164		
•	05443			COFRN08	LSH	AQ*6ANEG	07132	07700	00006		
•	05444				JP	COFRN08	07133	61000	07132		
•	05445				SEL	SET*W(SIXTIES)	07134	50030	07166		
•	05446				STR	A*W10INT(TEGER+1)	07135				
•	05447				STR	Q*A	07136	14040	00000		
•	05450				SEL	SET*W(SIXTIES)	07137	50030	07166		
•	05451				STR	A*W10INT(TEGER+1)	07138	15030	07177		
•	05452			COFRN081	ENT	B7*N(BETA)	07141	12730	07170		
•	05453				BJP	B7*COFRN09	07142	72700	07144		
•	05454				JP	COFRN011	07143	61000	07153		
•	05455			COFRN09	ENT	A*W(SIXTY)	07144	11030	07160		
•	05456				CL	Q*	07145	10000	00000		
•	05457				BJP	B7*COFRN010	07146	72700	07150		
•	05460				JP	COFRN011	07147	61000	07153		
•	05461			COFRN010	LSH	AQ*510	07150	07000	00066		
•	05462				SEL	SET*W(SIXTY)	07151	50030	07160		
•	05463			COFRN011	BJP	B7*COFRN010	07152	72700	07150		
•	05464				RSE	SET*W((OFRACITION))	07153	54030	07200		
•	05465				STR	Q*A	07154	14040	00000		
•	05466				RSE	SET*W((OFRACITION+1))	07155	54030	07201		
•	05467				EXIT		07156	61010	07053		

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CAROS	L1	I0	LABEL	TA	STATEMENT	PRINTOUT	SPURT OUTPUT NO. 210 J00*1/22/65	LOC	F	JKB	Y	NOTES
			C5470	HIBIT	40000	0		07157	40000	00000		
			05471	SIXTY	60000	0		07160	60000	00000		
			05472	SIXTYFIVE	65000	0		07161	65000	00000		
			05473	M6L	77000	0		07162	77000	00000		
			05474	SEVENTYONE	71000	0		07163	71000	00000		
			05475	BITS	01000	0		07164	01000	00000		
			05476	FXCOOE	0	0		07165	00000	00000		
			05477	SIXTIES	60606	06060		07166	60605	06060		
			05500	GAMMA	RESERVE	1		07167	00000	00000		
			05501	BETA	RESERVE	1		07170	00000	00000		
			05502	INTEGER	RESERVE	1		07171	00000	00000		
			C5503	FRACTION	0	0		07172	00000	00000		
			05504	SIGN	RESERVE	1		07173	00000	00000		
			05505	EXPONENT	RESERVE	1		07174	00000	00000		
			05506	FPFRACITION	RESERVE	1		07175	00000	00000		
			C5507	INTTEGER	RESERVE	2		07176	00000	00000		
			05510	IFRACITION	RESERVE	2		07206	00000	00000		
			05511	LOEXPONENT	RESERVE	1		07202	00000	00000		
			05512	EXP SIGN	RESERVE	1		07203	00000	00000		
			C5513	UNPACKBUFF	0	PBUF+		07204	00000	00000		
			05514	PACKBUFF	U-TAG	PREGION+ 1*PREGION+270		07205	07207	07241		
			05515	PREGION	00	00		07206	00000	00000		
			05516	PREGION	RESERVE	260		07207	00000	00000		
			C5517	00	00			07241	00000	00000		
			05520	00	00			07242	00000	00000		
			05521	PBUF	RESERVE	260		07275	00000	00000		
			05522	PBUF	RESERVE	1290		07275	00000	00000		
					RESERVE	1		07475	00000	00000		
					RESERVE	1		07476	12300	00004		
					RESERVE	1		07477	30100	00004		
					RESERVE	1		07500	00002	50600		
					RESERVE	1		07501	12300	00010		
					RESERVE	1		07502	60000	00000		
					RESERVE	1		07503	77760	00000		
					RESERVE	1		07504	00026	70660		
					RESERVE	1		07505	40000	00000		
					RESERVE	1		07506	52000	00004		
					RESERVE	1		07507	20300	00004		
					RESERVE	1		07510	12200	00010		
					RESERVE	1		07511	20300	00010		
					RESERVE	1		07512	00300	00010		
					RESERVE	1		07513	02300	00010		
					RESERVE	1		07514	21100	00010		

## SPURT OUTPUT NO. 211

PRINTOUT	LOC	LABEL	LOC	LABEL	LOC	LABEL
	07476	A\$\$\$\$\$111	07477	A\$\$\$\$\$1113	07500	A\$\$\$\$\$1113
	07501	A\$\$\$\$\$1114	00455	A\$\$\$\$\$1116	00457	A\$\$\$\$\$1116
	00463	A\$\$\$\$\$1117	07502	A\$\$\$\$\$1119	07503	A\$\$\$\$\$1119
	07504	A\$\$\$\$\$111A	01430	A\$\$\$\$\$111C	01537	A\$\$\$\$\$111C
	01565	A\$\$\$\$\$1110	07505	A\$\$\$\$\$111F	07506	A\$\$\$\$\$111F
	07507	A\$\$\$\$\$111G	07510	A\$\$\$\$\$1111	07511	A\$\$\$\$\$1111
	07512	A\$\$\$\$\$111J	07513	A\$\$\$\$\$111L	07514	A\$\$\$\$\$111L
	63071	ACQAZIM	63075	ACQUEV	63427	ACQUI
	63142	ACTUALTIME	01561	AJUSTBUFR	63416	AOSCN
	01374	AOVANB1	63507	AEOBOXLINES	63417	AESCN
	63517	ALNGOFFSET	63506	ALNGACRSCN	04416	ANNTITLE
	03412	ANSOUTPUT	04517	ANSENOTM	04502	ANSSTM
	63524	ARCOFAZIM	63526	ARCOFOEC	63522	ARCOFEV
	63530	ARCOFRA	00646	ARNO	01525	ARNOHEAD
	01536	ARNOHENRY	02030	ASKHR	02042	ASKMIN
	02051	ASKSEC	00101	ASKTIMES	04541	ASTARK
	63106	ASTROEC	63105	ASTRORA	05257	ATAN
	63341	AUPEREQUAT	00222	AWAYEGO	72003	AZELTIME
	02234	AZOUTSW	63120	AZOIFS	63532	AZELTIME
	63500	AZELBXSCAN	63053	AZIM	63512	AZIMOFFSET
	64000	AZIMOUT	63325	AZIMOVER	63442	AZIMAO0
	75000	AZIMIN	75000	AZINEQ	02230	AZINSM
	63501	AZIMTHSCAN	63462	BODYSIZE	06227	BOTLINE
	06225	BOTHMARG	03115	BACK	03222	BACKWOS
	00325	BACKWOSA	03767	BAOMCH	03260	BAONEWS
	01764	BASICCOLC	01715	BASICCOLRA	03236	BASICLOOP
	03371	BCOOUTPUT	03406	BCDANS	03506	BCOBLOCK
	03372	BCOQUES	04460	BEHAEOE	07170	BETIA
	02360	BIGT	06715	BINOCTFL0	06721	BINOCTFL01
	06722	BINOCTFL02	06731	BINOCTFL03	06733	BINOECFRA
	06743	BINDECFLA1	06744	BINDECFLRA2	06664	BINDECFLRA
	06676	BINDECINT1	06677	BINOECINT3	06714	BINOECINT3
	06712	BINDECINT4	07164	BITS	63146	BLASTOFF
	02025	BRANONEW	00760	BRNO	02725	BUFFERPRV
	63414	COCON	06772	COFF1	06756	COFFIX
	07010	COFFTEM1	07011	COFFTEM2	07053	COFRNO
	07064	COFRN01	07150	COFRN010	07153	COFRN011
	07066	COFRN02	07070	COFRN03	07074	COFRN04
	07077	COFRN011	07102	COFRN05	07112	COFRN051
	07117	COFRN02	07122	COFRN06	07125	COFRN07
	07132	COFRN08	07141	COFRN081	07144	COFRN09
	07012	COFXSTOR	02201	COMMA	04521	COMPAREET
	04520	COMPARET	63135	CONVERTIME	63420	CORCT
	05140	COS	63065	COSORIENT	63070	COSAZEL
	04103	COUNT	02664	COUNTER	03106	C1SEXTINT
	00272	CARRION	03540	CARRIAGEC	63060	CAZIM
	63113	CELBOOY	63424	CELCOMP4M	63061	CELEV
	63133	CELTIME	00431	CHOICEQUE\$	04011	CHANNEL
	06525	CHARNO	63422	CHCOR	00136	CHKCENTM
	00553	CHECKMIN	02714	CHGAOR	01632	CHKOVLAP
	63431	CNTRP	01376	CRANGE	63057	CRANGE

SPURT OUTPUT NO. 211			
PRINTOUT	LOC	LABEL	LOC
CRSSOFFSET	63516	CSKEY	04533
OOPOUTSW	0224D	OOPPUT	66000
OOBLESP	03744	02483	04332
0360B3	04272	06DB1	04333
DATA	63000	0ATA2	71000
DATA SWITCH	02226	DAY	63150
DAY	02161	0OCOL	01733
DECOFFSET	63515	0ECDUT	05065
DECQEG	04273	0EINOMS	04240
DECIN	04274	0EPOINT	04300
DECSEC	04275	0ESECXX	04276
DELTAD	06000	0ELETATE	63316
DICTIONARY	04104	0EHRHS	04526
OMESECS	04530	0MESECTTG	04532
OMSHRS	04523	0MSMINS	04524
OMSSECTTG	04531	0PTCDL	01761
DSECCOL	01751	0SSXXCOL	01755
0UMSECTTG	63154	0YDMP	63421
EOFNEWS	03343	0EINWS	03330
ELOUTSW	02236	0ELDTS	63121
ELEVOFFSET	63513	0ELEVDT	65000
ELEVIN	7600D	0ELINEQ	76000
ELVNSCAN	63502	0ENOF TAPM	03553
ENOTAPM	03362	0ENOTAPEU	04237
ESTSHIFTE0	63143	ETANS	04512
EVERYN	02006	EXCESS60	03322
EXPNAME	63350	EXP SIGN	07203
FORAZIM	00667	FORAZIN	01232
FOROPDUT	0135D	FOREOUT	01307
FOREIN	01253	FORRDP	01766
FOSTATCOOE	03176	FOTAPER	03240
FILLBLNK	02004	FILLCHAR	00575
FINALIZER	0041D	FIRSTTEV	63104
FLATTENING	63337	FMEOF\$3	00424
FNLOOP	00364	FPPRACITION	07175
FRAMESIZE	63101	FREQUENCY	63317
FX	02217	FXCODE	07165
GAMMA	07167	GEODENLAT	63322
GETOUT	01554	GETAD0	06264
GETPACK	02645	GMIMODU24	63145
HOLONOHOL0	63511	HOURLMINUTE	63137
HOURS	02211	HOMANY	02067
HEADKEY	02126	HEIGHT	63326
HHCOL	01664	HBIT	07157
I0EXPONENT	07202	I0FRACTION	07200
I01DRADIO	66777	I011RA010	67776
I014RA010	70775	I014RA010	70776
I016RA010	71777	I017RA010	72776
I019RA010	73776	I01CELCR	63000
I01RA010	63050	I01RA010	63440
I01SYNSAM	77576	I01SYNSAM	77676

SPURT OUTPUT NO. 211

PRINTOUT J00\* 1/22/65

LABEL	LOC	LABEL	LOC	LABEL	LOC
IO1TIME	63130	IO20RA010	73777	IO21RA010	74776
IO22RA010	74777	IO23RA010	75777	IO24RA010	75777
IO25RA010	76775	IO26RA010	76776	IO27CLCR	63001
IO2ENTPNT	63411	IO2RA0COR	63051	IO2RA010	63441
IO2RECREO	63211	IO2SYSENT	77577	IO2SYSNM	77677
IO2SYSPAR	63311	IO2TIME	63131	IO3RA010	63776
IO4RA010	63777	IO5RA010	64776	IO6RA010	64777
IO7RA010	65776	IO8RA010	65777	IO9RA010	66776
INAZIMAO0	63446	INBUFFER	03101	INNELEAO0	63447
INPUTTAPENO	03324	INSERT	00046	INSERTA	02066
INSERTX	02622	INTEGER	07171	INTER	63413
INTERAZIM	72000	INTERCOM	63426	INTEROPP	74000
INTERELEV	73000	INTERJUMP	03114	INTERLOCK	63460
INTERLOCKP	03123	INTERLUCK	04006	INTJUMP	3766
INTERRANGE	76777	INTERRUP T	03761	ISERA011	00637
IRSWITCH	02222	ISAU	00624	JPINTERUP	03760
ISIO	01403	JPC15EXT	03200	KOCTIO0	03304
JPPRINTOVR	02723	JUMPBACK	00426	KMPERNM	63342
KOVRLLAP	01641	KEEPON	00203	KP3	03466
KP1	03464	KP2	03465	KP6	03471
KP4	03467	KP5	03470	KPQ	03463
KP7	03472	KPA	03462	LOOP1	04226
KYBROLEVEL	63110	LOOP112	04233	LOOPSTART	02644
LOOPLIMIT	02653	LOOPX	01223	LOCKP	03131
LOOPSTART2	04224	LABELA	04341	LABELB	04367
LONGITUDE	63320	LAUNCHEO	00234	LAYUPLMT	00202
LAI0OUT	03541	LETSGO	00164	LINCT	06230
LAYUPSTOR	06322	MONTH	02127	MORELOOK	01545
LSPERAU	63336	MOVER	01427	M6L	07162
MORESTUFF	01154	MACHFAULT	03157	MAINSWITCH	63334
MACHERR	03266	MCPFILLER	71000	MCPGM	63412
MAXETIME	04522	MINREG	63152	MINS	02212
MILLSTNA00	63451	MSFREQ	63332	MSWITCH	02221
MMCOL	01676	MYOUT	02406	MYHEAO	02242
MUTE	04426	NOPTS	02215	NOREW	00030
NOGOTHRU	00451	NOTIO	00452	NOTINSIM	00276
NOTOPPAGE	00270	NOWANS	00443	NOWONTIME	00524
NOTZERO	01551	NOWQUES	00427	NOWRAHH	00745
NOWOEC	00611	NEGSIGN	04277	NEWTAPE	04033
NOWWHAT	00447	NIL	00000	NMPERAU	63340
NEWTITLE	00100	NOTIO	00452	POCTA	05455
NWSRCHIP	00200	POCTB	05471	POCTERR	05475
POCTB	05465	POLE	63324	PORA	01647
POOEC	01716	POSRNG	00740	PACK	04204
PORUN	00002	PAGESIZE	00102	PARTY	03201
PACKBUFF	07205	PASTOR	06611	PBLANK	05621
PARTYMSG	03212	PBLANK1	05644	PBLANK2	05654
PBLANK05	05635	PBLANK4	05665	PBLANK5	05666
PBLANK3	05662	PBUF	07274	PCOLIN	05717
PBLANK6	05667	PCOLIN1A	05735	PCOLIN2	05740

SPURT OUTPUT No. 211

JOD\*1/22/65

PRINTOUT

LOC	LABEL	LOC	LABEL	LOC	LABEL
05744	PCOLIN3	05745	PCOLINS	05746	PCOLINS
05670	PCOLR	05677	PCOLR2	05705	PCOLR2
05710	PCOLR3	05714	PCOLRS	05715	PCOLRS
05716	PCOLRG	06223	PENTA	06260	PENTA
06243	PENTRY	PERIOOAZIM	PERIOOEC	63525	PERIOOEC
63521	PERIOOELEV	PERIOORA	PERIORI	63525	PERIORI
06660	PERIOR15	PERIOR4	PERIORR	06654	PERIORR
06663	PEROR9	PERORR	PERORR2	06662	PERORR2
06222	PEXTINT	PFORASTOR	PFORBSTR	06623	PFORBSTR
05773	PFORM	PFORMERR	PFO	06054	PFO
05571	PFOA	PFOB	PFOC	05557	PFOC
05614	PFOERR	PFDERR1	PFIX	05607	PFIX
05507	PFIXB	PFIXC	PFIXO	05476	PFIXO
05550	PFIXERR	PFIXERR1	PFIXERR2	05532	PFIXERR2
05551	PFIXERRA	PFIXF	PFRACA	05556	PFRACA
06560	PFRACB	PFRACER	PFRACER1	06540	PFRACER1
06526	PFRACSTOR	PGMTABLE	PICKPGM	06562	PICKPGM
05747	PIMAGE	PIMAGE1	PIMAGE2	01477	PIMAGE2
05772	PIMAGE3	PINT	PINTB	05771	PINTB
05415	PINTC	PINTERR	PINTERI	05406	PINTERI
05437	PINTERR2	PINTERRA	PINTEXIT	05436	PINTEXIT
02507	PLOAZIM	PLOCAZIM	PLOCELEV	05424	PLOCELEV
02515	PLOCRANGE	PLOPEC	PLOECOOT	02522	PLOECOOT
02510	PLOELEV	PLORA	PLORAOOT	02506	PLORAOOT
02504	PLORAOIJUS	PLORADSDT	PLORNGOOT	02516	PLORNGOOT
02520	PLOSAZIM	PLOSDEC	PLOSORTME	02523	PLOSORTME
02521	PLOSELEV	PLOSEPARE1	PLOSPRA	02513	PLOSPRA
02524	PLOSYSTAT2	PLOTP	PLOTRUNG	02512	PLOTRUNG
02526	PL2RA	PL4RA	PL6AZIM	02603	PL6AZIM
02605	PL6CAZIM	PL6CELEV	PL6CRANGE	02611	PL6CRANGE
02577	PL6DEC	PL6DECDOT	PL6ELEV	02604	PL6ELEV
02576	PL6RA	PL6RADOT	PL6RADUS	02600	PL6RADUS
02601	PL6RAQSOT	PL6RNGDOT	PL6SAZIM	02614	PL6SAZIM
02610	PL6SDEC	PL6SORTME	PL6SELEV	02615	PL6SELEV
02621	PL6SPARE1	PL6SRA	PL6SYSTEM	02611	PL6SYSTEM
02606	PL6TRUNG	PLANP	PLAYBSTR	02620	PLAYBSTR
06265	PLAYUP	PLAYUPA	PLAYUPB	02612	PLAYUPB
03224	PMSG	PQSTOR	PREGION	02612	PREGION
06576	PRESTORE	PREVIOUSSTM	PRINRECWS	02610	PRINRECWS
02665	PRINT	PRINTOUT	PRINTOVER	02720	PRINTOVER
02724	PRINTBUFFC	PRINTTITLE	PRINTWD	06231	PRINTWD
63423	PRLOG	PRSCRIBC	PSAVE	06563	PSAVE
06234	PSCASTOR	PSCQSTOR	PSCRASR	06220	PSCRASR
06134	PSCRAUF	PSCRIB	PSCRIBA	06067	PSCRIBA
06074	PSCRIBB	PSCRIBC	PSCRIBO	06233	PSCRIBO
06162	PSCRIBERR	PSCRIBF	PSCRIBG	06144	PSCRIBG
06103	PSCRIBH	PSCRIBI	PSCRIBJ	06116	PSCRIBJ
06163	PSCRIBSS	PSCRIBSA	PSCRIBSB	06241	PSCRIBSB
06242	PSCRIBSC	PSCRIBSW	PSCRINT	06202	PSCRINT
06221	PSCROSTOR	PTCOL	PUTCOUNT	01712	PUTCOUNT
02632	PUTCOUNTER	QNSERT	QNSERTA	04511	QNSERTA

## SPURT OUTPUT NO. 211

PRINTOUT J00•1/22/65

LABEL	LOC	LABEL	LOC	LABEL	LOC
QHLOOP	00337	RA	63002	RAOFFSET	63514
RAOUT	05066	RA00T	63007	RAOARMOE	63312
RAOXXSCAN	63503	RA00C	02065	RADECOTIME	63531
RA010DEC	63541	RA010METER	63102	RA010RA	63540
RA010NIC	63157	RA01USOOT	63006	RA01USOOT	63011
RAHH	04335	RAINHH	04301	RAHH	04336
RANGE	63052	RANGEOUT	70777	RANGEAO	63445
RANGEOUT	63062	RAPLUS	01674	RASCTNSCAN	63504
RASIGN	04334	RASS	04337	RASSXX	04340
RB27	01642	ROOT0IFS	63123	RO19BITS	05031
ROAZ	05034	ROBOXLINES	63510	ROCONV	04542
ROCO5AZ	05044	ROCOSEL	05046	ROCO5PHE	05073
ROCO5SITE	05052	RODEGRAO	05067	ROEL	05035
ROFACT1	05055	ROFACT2	05056	RO1FS	63122
ROINT	04762	ROINITINO	05027	ROK1	05037
ROK11	05040	ROK2	05041	ROK21	05042
ROMR	63430	ROPA	04544	ROPE	04545
RDPG	04550	ROPEHE	05071	ROPR	04546
ROPS	04547	RORAOT00EG	05063	RORAOTOREV	05070
RORANGE	05036	ROREVMASK	05032	ROSCALLB24	05062
ROSEIK	04607	ROSINAZ	05045	ROSINEL	05047
ROSIMPHEE	05072	ROSINSITE	05053	ROSITEOR	05051
ROSTAR	04551	ROTEMP	05054	ROTHSIXTY	05033
ROTSF	05043	ROTSEC	05050	ROWONSEC	05064
ROWNEREV	05030	ROXSPRIME	05057	ROXXX	63433
ROYSPRIME	05060	ROZSPRIME	05061	READLOOP	00320
READTAPE	03074	RECORDSIZE	63112	RECAZ14	67000
RECELEV	70000	RECFILE	63212	RECRO	63415
RECRSWATCH	63155	REOUNDANT	03772	RELEASESH	63156
RESECTNT	00274	RESTART	00042	REVITAL	00166
REWYRN	03461	RESTORALL	03426	SAVEALL	03413
SAY11	02021	SAZIM	63055	SCLT1ME	63134
SOEC	63005	SEARCHTAPE	00173	SECONDS	63140
SECS	02213	SELEV	63056	SETUP	02672
SEVENTYONE	07163	SGNCOL	01741	SIOERT1MF	63012
SIGN	07173	SIGNCOL	01672	SIMSWITCH	02026
SIN	05151	SINORIENT	63064	SINAZEL	63066
SINGLES	03745	SIXTIES	07166	SIXTY	07160
SIXTYFIVE	07161	SK1P	63331	SK1POVFR	00347
SK1PPF	00376	SLAVE	63126	SLAVEOPTS	63124
SLAVEMOODES	63125	SORT	01704	SRA	63004
SRADTIME	63136	SSCOL	01702	SSXXCOL	01706
STORECR	02707	STORELF	02711	STOREPACK	04232
STORUNPAK	02650	STANOEOCSE	00071	STANOEOCSY	00073
STANS	04476	STAT	03323	STATCODE	04012
STATSTOR	06236	STATUS	06237	STATUSCODE	03137
STAYLATE	01627	STHR	02060	STMM	02061
STQUES	04467	STRNOW	01575	STSS	02062
SUPBSTR	07050	SUPZRO1	07014	SUPZRO4	07043
SUPZRO2	07026	SUPZRO3	07036	SUPZRO5	02661
SVR5	07047			J2662	

SPURT OUTPUT NO. 211

J00\*1/22/65

PRINTOUT	LOC	LABEL	LOC	LABEL
SVB5	02663	SYNTIMING	63542	SYSCOMMREG1
SYSCOMMREG2	63453	SYSCOMMREG3	63454	SYSCOMMREG4
SYSCOMMREG5	63456	SYSCOMMREG6	63457	SYSCOMMREGS
SYNNAMES	77700	SYSTAT1	63313	SYSTAT2
SYSTAT0	63315	TOPOFPAGE	03743	TOPORNUT
TOPLINE	06226	TOWERA	03455	TOREWQ
T1	02274	T2	02326	TALKHENRY
TAPEOUTPUT	03473	TAPEARMMSG	03225	TELLOONE
TELLHR	02036	TELLMIN	02045	TELLSEC
TELLTOP	01770	TEMP	02204	TENG816
TIME	02220	TIMEOK	00560	TIMECORR
TIMEMOE	63103	TIMEP	63435	TIMEOTORHOLO
TITLEENT	02027	TITLEKEY	04415	TRANS
TRANS1	04073	TRANS2	04076	TRANS3
TRANSLATE	04060	TRUE RANGE	63063	TRUE TIME
TRYAGAIN	03206	TIG	02063	TTISNEG
TTSTATUS	63111	TWORONE	00405	TWOSECOP
TWENTYSIXS	06224	UNIT210	03257	UNITNO
UNITNOINT	03136	UNPACK	02623	UNPACKBUFF
UNPACKCODE	02677	UTAGSWITCH	02224	VARYUTAG
VELOFLIGHT	63335	VIZOEC1	63014	VIZOEC2
VIZRA1	63013	VIZRA2	63015	WOROCOUNT
WAIT1	03105	WAITPRINT	02717	WAKEUP
WFOR0	63432	WFAOO	63450	WFREQ
WHATOO	00357	WHERE2GO	00450	WHICHCPGM
WISEGUY	01564	WLOOP	00044	WRITE
WRITEOUT	03756	WRITEAGAIN	03754	WRITEEOF
WRITESERVO	04032	WLLOOPX	01407	YEAR
YEARMONTH	63147	YRTRAN	633327	ZRTRAN

END OF LISTING

PRINTOUT . . . . . SPURT OUTPUT NO. 212

LOC	LABEL	LOC	LABEL	LOC	LABEL
00000	PRINTOUT	00000	NIL	00000	PORUN
00007	FRPERPAGE	00023	FILEDONE	00002	NOREW
00042	RESTART	00044	WLOOP	00046	INSERT
00071	STANDEOCSE	00073	STANOEDCSY	00071	NEWTITLE
00101	ASKTIMES	00102	PAGESIZE	00100	CHCKENTM
00164	LETSGO	00166	REVITAL	00136	SEARCHTAPE
00200	NWSRCHTP	00202	LAYUPLM	00173	KEEPON
00222	AWAYWEGO	00234	LAUNCHED	00203	BASICLOOP
00270	NOTOPPAGE	00272	CARRION	00236	RESETCNT
00276	NOTINSAM	00306	TOPRONT	00274	READLOOP
00321	VARYUTAG	00322	BACKWOSA	00320	BACKWOSA
00337	QWLOOP	00341	QNSERT	00325	SKIPOVER
00357	WHATOO	00364	FNLOOP	00347	GOTHRU
00376	SKIPPFF	00405	TWODRONE	00366	FINALIZER
00415	FMJMPBACK	00424	FMEODFS3	00410	JUMPBACK
00427	NOWQUES	00431	CHOICEQUE S	00426	NOWANS
00447	NOWWHAT	00450	WHERE TO GO	00443	NOGOTHRU
00452	NOTID	00453	A\$\$\$\$\$1115	00451	A\$\$\$\$\$1116
00463	A\$\$\$\$\$1117	00520	TTISNEG	00457	NOWOUTIME
00553	CHECKWIN	00560	TIMEOK	00524	FILLCHAR
00611	NOWDEC	00624	ISAU	00575	ISERADII
00646	ARNO	00667	FORAZIM	00637	FORELEV
00740	POSRNG	00745	NOWRAHH	00700	BRNO
01154	MORESTUFF	01223	LOOPX	00760	FORAZIN
01223	FORELIN	01266	FORAZOUT	01232	FORELOUT
01350	FOROOPPUT	01374	AOVANBI	01307	CNTRPT
01403	ISIO	01407	WLOOPX	01376	DAMIC
01427	MOVER	01430	A\$\$\$\$\$1118	01477	PICKPGM
01515	WHICHCPGM	01521	TALKHENRY	01525	ARNOHEAD
01536	ARNOHENRY	01537	A\$\$\$\$\$111C	01545	MORELOOK
01551	NOTZERO	01554	GETOUT	01561	ADJUSTBUFR
01564	WISEGUY	01565	A\$\$\$\$\$1110	01575	STRNOM
01577	PGMTABLE	01627	STAYLATE	01632	CHKVLAP
01641	KOVR LAP	01642	RB27	01647	PORA
01664	HHCOL	01672	SIGNOL	01674	RAPLUS
01676	MMCOL	01702	SSCOL	01706	SSXXCOL
01712	PTCOL	01715	BASICCOLRA	01716	POOEC
01733	OOCOL	01741	SGNOL	01743	DECPLUS
01745	OMINCOL	01751	DSEICOL	01755	DSSXXCOL
01761	OPTCOL	01764	BASICCOLC	01765	TENG816
01766	FORROPA	01767	FORROPE	01770	TELLTOP
02004	FILLBLNK	02005	FILLNEG	02006	EVERYN
02021	SAYIT	02025	BRANDNEW	02026	SIMSWITCH
02027	TITLECANT	02030	ASKHR	02036	TELLHR
02042	ASKMIN	02045	TELLMIN	02051	ASKSEC
02054	TELLSEC	02060	STHR	02061	STM
02062	STSS	02063	TTG	02064	D360B20
02065	RAODEC	02066	INSERTA	02067	HOWMANY
02070	HEAD	02126	HFAKEY	02127	MONTH
02161	OAYS	02177	YEAR	02200	DAYNO
02201	COMMA	E		02202	TEMP

PR INTOUT		J00•1/22/65		SPURT OUTPUT No. 212	
LABEL	LOC	LABEL	LOC	LABEL	LOC
HOURS	02211	MINS	02212	SECS	02213
FOROOP	02214	NOPS	02215	OELTIME	02216
FX	02217	TIME	02220	MSWITCH	02221
IRSWITCH	02222	UTAGSWITCH	02224	OATASWITCH	02226
AZINSW	02230	ELINSW	02232	AZOUTSW	02234
ELOUTSW	02236	OOPOUTSW	02240	MYHEAD	02242
T1	02274	T2	02326	BIGT	02360
MYOUT	02406	PLORA	02502	PL00EC	02503
PLORA01US	02504	PLORA00T	02505	PLORA00T	02506
PL0AZIM	02507	PLOLEV	02510	PLOCAZIM	02511
PLOTURNING	02512	PLORSA	02513	PLOSEC	02514
PLOC RANGE	02515	PLRNG00T	02516	PL0ECD0T	02517
PLOSAZIM	02520	PLOSELEV	02521	PL0ELEV	02522
PLOS0R1ME	02523	PLOSYSTAT2	02524	P0SPARE1	02525
PL2RA	02526	PLURA	02552	PL6RA	02576
PL60EC	02577	PLRA01US	02600	PL6RA00T	02601
PL6RA00T	02602	PL6AZIM	02603	PL6ELEV	02604
PL6CAZIM	02605	PL6TRUNG	02606	PL6SRA	02607
PL6SOEC	02610	PL6CRANGE	02611	PL6RNG00T	02612
PL60EC00T	02613	PL6AZIM	02614	PL6SELLEV	02615
PL6CELEV	02616	PL6S0RTME	02617	PL6SYSTAT2	02620
PL6SPARE1	02621	INSERTX	02622	UNPACK	02623
PUTCOUNTER	02632	LOOPSTART	02644	GETPACK	02645
LOOP1	02646	STOREUNPAK	02650	LOOPLIMIT	02653
SVB3	02661	SVB4	02662	SVBS	02663
COUNTER	02664	PRINT	02665	SETUP	02672
UNPACK00E	02677	STORECR	02707	STORELF	02711
CHGAOR	02714	WAITPRINT	02717	PRINTOVER	02720
JPPRINT0VR	02723	PRINTBUFFC	02724	BUFFERPRNT	02725
READTAPE	03074	INBUFFER	03101	WAIT1	03105
C15EXTINT	03109	INTERJUMP	03114	BACK	03115
INTERLOCK	03116	INTERLOCKP	03123	LOCKP	03131
UNITN0INT	03136	STATUS00E	03137	MACHFAULT	03157
UNITN0	03171	POST00E	03176	JPC15EXT	03200
PARTY	03201	TRYAGAIN	03206	PARTYMSG	03212
PMSG	03224	TAPEARMSG	03225	FOTAPEPAR	03240
WRITEEOF	03253	UNIT210	03257	BA0NEWS	03260
MACHERR	03266	KOCT0F0	03304	QUMY	03320
EXCESS0	03322	STAT	03323	INPUTTAPEN0	03324
EOTNEWS	03320	E0NEWS	03343	ENOFTAPM	03353
ENOTAPEH	03362	HSP0UTPUT	03370	B00UTPUT	03371
BC0QUES	03372	BC0ANS	03406	ANS0UTPUT	03412
SAVEALL	03413	RSTORAL	03426	T0REWQ	03441
T0REWA	03415	REW0RN	03461	KPA	03462
KPQ	03463	KP1	03464	KP2	03465
KP3	03466	KP4	03467	KP5	03470
KP6	03471	KP7	03472	TAPE0UT	03473
BC0BLOCK	03506	CARRIAGEC	03540	LA100UT	03541
TOP0PAGE	03743	DOUBLESP	03744	SINGLES P	03745
WRITE	03746	WRITEAGAIN	03754	WRITE0UT	03756
HERE	03757	JPIINTERUP	03760	INTERRUPT	03761

SPURT OUTPUT No. 212  
J00•1722/65

PRINTOUT	LOC	LABEL	LOC	LABEL	LOC	LABEL
INTJUMP	03766	BAOMCH	03767	REOUNANT	03772	
ENOTAPE	04001	INTERLCK	04006	CHANNEL	04011	
STATCODE	04012	WRITESRVO	04032	NEWTAPE	04033	
WAKEUP	04044	TRANSLATE	04060	TRANS	04063	
TRANS 1	04073	TRANS2	04076	TRANS 3	04077	
COUNT	04103	DICTIONARY	04104	PACK	04204	
PUTCOUNT	04210	LOOPSTART2	04224	LOOP2	04226	
GETCHAR	04227	STOREACK	04232	LOOPLIMIT2	04233	
WORCOUNT	04236	ENOTAPEU	04237	OECINOMS	04240	
OECSIGN	04271	0360B3	04272	OECOEG	04273	
OECMIN	04274	OECSEC	04275	OECSECXX	04276	
NEGSIGN	04277	DECPOINT	04300	RAINHH	04301	
024B3	04332	D60B 1	04333	RASIGN	04334	
RAHH	04335	RAMM	04336	RASS	04337	
RASSXX	04340	LABELA	04341	LBLABEL	04367	
TITLEKEY	04415	ANNTITLE	04416	PRINTTITLE	04424	
MUTE	04426	BEHEADED	04460	STQUES	04467	
STANS	04476	ANSSTTM	04502	ETQUES	04503	
ETANS	04512	QNSERTA	04516	ANSNOTM	04517	
COMPAREST	04520	COMPARET	04521	MAXETIME	04522	
OMSHRS	04523	DMSMINS	04524	OMSSECS	04525	
OMEHRS	04526	DMEMINS	04527	OMESECS	04530	
OMSSECTTG	04531	DMESECTG	04532	CSKEY	04533	
TELLOONE	04534	ASTARX	04541	ROCONV	04542	
ROPA	04544	RDPE	04545	ROPR	04546	
ROPS	04547	RDPG	04550	ROSTART	04551	
ROSETK	04607	RDINIT	04762	ROINITIND	05027	
ROWNEREV	05030	RD19BITS	05031	ROREVMASK	05032	
ROTHSIXTY	05033	RDAZ	05034	ROEL	05035	
RORANGE	05036	RDK 1	05037	ROK 11	05040	
ROK2	05041	RDK2 1	05042	ROTSF	05043	
ROCOSSA2	05044	RD5INA2	05045	ROCOSEL	05046	
ROSINEL	05047	RD7WSEC	05050	ROSITEROR	05051	
ROCOSSITE	05052	RD5INSTE	05053	ROTEMP	05054	
ROFACT 1	05055	RDFACT2	05056	ROXSPRIME	05057	
ROYSPRIME	05060	RDZSPRIME	05061	ROSCALB4	05062	
RORAOTOOEG	05063	RDWONSEC	05064	OECOUT	05065	
RAOUT	05066	RDEGRAD	05067	RORAOTOREV	05070	
ROPHEE	05071	RDSINPHEE	05072	ROCOSPHEE	05073	
SQRT	05074	COS	05140	SIN	05151	
ATAN	05257	PINT	05362	PINTB	05406	
PINTC	05415	PINTEXIT	05424	PINTERR	05432	
PINTERRA	05433	PINTERI	05436	PINTERR2	05437	
POCT	05440	POCTA	05455	POCTB	05465	
POCTERR	05471	POCTERR 1	05475	PFIX	05476	
PFIXB	05507	PFI 1C	05523	PFIXO	05532	
PFIXF	05543	PFI XERR	05550	PFIXERRA	05551	
PFI XERR 1	05555	PFI XERR 2	05556	PFO	05557	
PFOA	05571	PFDB	05600	PFOC	05607	
PFOERR	05614	PFDERR 1	05620	PBLANK	05621	
PBLANK05	05635	PBLANK 1	05644	PBLANK 2	05654	

SPURT OUTPUT NO. 212

JDO•1/22/65

PRINTOUT

LABEL	LOC	LABEL	LOC	LABEL	LOC
PBLANK3	056662	PBLANK4	056665	PBLANK5	056666
PBLANK6	056667	PCOLR	05670	PCOLR1	05677
PCOLR2	05705	PCOLR3	05710	PCOLR4	05714
PCOLR5	05715	PCOLR6	05716	PCOLIN	05717
PCOLIN1	05726	PCOLIN2	05735	PCOLIN3	05740
PCOLIN3	05744	PCOLIN4	05745	PCOLIN5	05746
PIMAGE	05747	PIMAGE1	05766	PIMAGE2	05771
PIMAGE3	05772	PFORM	05773	DELTAO	06000
PFORMERR	06052	PFORBSTR	06054	PFORASTOR	06056
PSCRIB	06057	PSCRIBA	06067	PSCRIBB	06074
PSCRIBF	06101	PSCRIBH	06103	PSCRIBJ	06116
PSCRIBI	06121	PSCRIBW	06123	PSCRIBUF	06134
PSCRIBG	06144	PRSCRIBC	06147	PRSCRIBERR	06162
PSCRIBSS	06163	PRSCRIBC	06202	PRSCRASTOR	06220
PSCRIBSTOR	06221	PEXTINT	06222	PCOLUMN	06223
TWENTYSIXS	06224	BOTMARG	06225	TOPLINE	06226
BOTLINE	06227	LINCNT	06230	PRINTWO	06231
PSCRIBC	06232	PSCRIBO	06233	PSCASTOR	06234
PSCQSTOR	06235	STATSTOR	06236	STATUS	06237
PSCRIBSSA	06240	PSCRIBSSB	06241	PSCRIBSSC	06242
PENTRY	06243	PENTA	06260	GETAO	06264
PLAYUP	06265	PLAYUPA	06301	PLAYUPB	06312
PLAYBSTOR	06315	LAYUPSTOR	06322	CHARVO	06324
PFRACSTOR	06526	PFRACA	06540	PFRACERR	06555
PFRACB	06560	PFRACERR1	06562	PSAVE	06563
PRESTORE	06576	PASTOR	06611	PQSTOR	06612
PERROR	06613	PERROR2	06623	PERROR4	06651
PERROR1	06654	PERROR15	06660	PERRORS	06662
PERROR9	06663	BINOECNT1	06664	BINOECNT1	06676
BINOECNT2	06677	BINOECNT4	06712	BINOECNT3	06714
BINOCTFL0	06715	BINOCTFL01	06721	BINOCTFL02	06722
BINOCTFL03	06731	BINOECFRA	06733	BINOECFRA1	06743
BINOECFRA2	06744	COFFIX	06756	COFFI	06772
COFFTEM1	07010	COFFTEM2	07011	COFXSTOR	07012
SUPZRO	07014	SUPZRO1	07025	SUPZRO2	07026
SUPZRO3	07036	SUPZRO4	07047	SUPZRO5	07047
SUPBSTOR	07050	COFRY0	07053	COFRN01	07064
COFRN02	07066	COFRN03	07070	COFRN04	07074
COFRN04	07077	COFRN05	07102	COFRN05	07112
COFRN05	07117	COFRN06	07122	COFRN07	07125
COFRN08	07132	COFRN08	07141	COFRN09	07144
COFRN10	07150	COFRN11	07153	HIBIT	07157
SIXTY	07160	SIXTYFIVE	07161	M6L	07162
SEVENTYONE	07163	BITS	07164	FXCOOE	07165
SIXTIES	07166	GAMMA	07167	BETA	07170
INTEGER	07171	FRACTION	07172	SIGN	07173
EXPONENT	07174	FPFRACTION	07175	10INTEGER	07176
INFRACITION	07200	10EXPONENT	07202	EXPSIGN	07203
UNPACKBUFF	07204	PACKBUFF	07205	PREGION	07206
PBUF	07274	ASSSSSS1111	07476	ASSSSSS1112	07477
ASSSSSS1113	07500	ASSSSSS1114	07501	ASSSSSS1118	07502

SPURT OUTPUT NO. 212

PRINTOUT	LOC	LABEL	LOC	LABEL	LOC	LABEL
ASSSS\$1119	07503	ASSSS\$111A	07504	ASSSS\$111E	07505	
ASSSS\$111F	07506	ASSSS\$111G	07507	ASSSS\$111H	07510	
ASSSS\$111I	07511	ASSSS\$111J	07512	ASSSS\$111K	07513	
ASSSS\$111L	07514	TOICELCOR	63000	DATA	63000	
102CELCOR	63001	RA	63002	OEC	63003	
SRA	63004	SOEC	63005	RADIUS	63006	
RA00T	63007	OEC00T	63010	RA0IUS00T	63011	
SIOERTIME	63012	VIZRA1	63013	VIZOEC1	63014	
VIZRA2	63015	VIZOEC2	63016	TWOSEC0P	63017	
101RA0COR	63050	102RA0COR	63051	RANGE	63052	
AZIM	63053	ELEV	63054	SAZIM	63055	
SELEV	63056	CRANGE	63057	CAZIM	63060	
CELEV	63061	RANGE00T	63062	TRUERANGE	63063	
SINORIENT	63064	COSORIENT	63065	SINAZEL	63066	
COSAZEL	63070	ACQAZIM	63071	ACQUELEV	63075	
FRAMESIZE	63101	RAIOMETER	63102	TIME00E	63103	
FIRSTEL EV	63104	ASTRORA	63105	ASTRO0EC	63106	
TIMEC0R	63107	KYBROLEV	63110	TTYSTAUS	63111	
RECORDSIZE	63112	CELBOOY	63113	AZOIFS	63120	
ELOIFS	63121	ROIFS	63122	ROOTOIFS	63123	
SLAVEOPTS	63124	SLAVEM00ES	63125	SLAVE	63126	
101TIME	63130	102TIME	63131	TRUE TIME	63132	
CELTIME	63133	SCLTIME	63134	CONVENT ME	63135	
SRA0TIME	63136	HOURMINUTE	63137	SECONOS	63140	
OSEC0NOS	63141	ACTUALTIME	63142	ESTSHIFTEO	63143	
GMTSHIFTEO	63144	GMTMOU24	63145	BLASTOFF	63146	
YEARMONTH	63147	DAY	63150	HOURREG	63151	
MINREG	63152	FIRSTHTRU	63153	OJMSECTG	63154	
REC0SWITCH	63155	RELEASESW	63156	RA0INOIC	63157	
PR1NREC0SW	63160	TOIRECRO	63210	102RECRO	63211	
RECFILE	63212	TOISYSPAR	63310	102SYSPAR	63311	
RA0ARMOE	63312	SYSTAT1	63313	SYSTAT2	63314	
SYSTAT0	63315	DELTATEE	63316	FREQUENCY	63317	
LONGITUDE	63320	GEODETLAT	63321	RA0ENLAT	63322	
EQUATOR	63323	POLE	63324	AZIMOVER	63325	
HEIGHT	63326	YRTRAN	63327	ZRTRAN	63330	
SKIP	63331	MSFREQ	63332	FFREQ	63333	
MAINSWITCH	63334	VEOLFIGHT	63335	LSPERAU	63336	
CHCOR	63422	NMPERAU	63340	AUPERFQAT	63341	
OATANALYZE	63425	EXPNAME	63350	101ENTPNT	63410	
ROMTR	63432	MCPGM	63412	INTER	63413	
102ENTPNT	63411	RECR0	63415	AOSCN	63416	
COCON	63414	CORCT	63420	0YOMP	63421	
AESCN	63417	PRLOS	63423	CELCOMP64	63424	
FLATTENING	63337	INTERCOM	63426	ACQUI	63427	
KMPERNM	63342	CHPAR	63431	WFURO	63432	
102ENTPNT	63411	PLANP	63434	TIMEP	63435	
COCON	63414	101RA010	63440	102RA010	63441	
CHCOR	63422	ELEV00	63443	OPPAOO	63444	
OATANALYZE	63425	INAZIMAO	63446	INELVAOO	63447	
ROMTR	63430	WILLSTNAOO	63451	SYSCOMREG1	63452	
RCXXX	63433					
PLOIP	63436					
ALTIMDO	63442					
RANGEA00	63445					
WF400	63450					

SPURT OUTPUT No. 212

PRINTOUT

LABEL	LOC	LABEL	LOC	LABEL	LOC
SYSCOMREG2	63453	SYSCOMREG3	63454	SYSCOMREG4	63455
SYSCOMREG5	63456	SYSCOMREG6	63457	INTERCLKS	63460
PREVIOUSTM	63461	BOOSIZE	63462	AZELBSCAN	63500
AZMTHSCAN	63501	ELVNTSCAN	63502	RADCBXSCAN	63503
RASCINSCAN	63504	OECLINSCAN	63505	ALNGACRSCN	63506
AEBOXLINES	63507	ROBOXLINE S	63510	HOLONOHOLD	63511
AZIMOFFSET	63512	ELEOFFSET	63513	RAOFFSET	63514
DECOFFSET	63515	CRSOFFSET	63516	ALNGOFFSET	63517
TIMEOFOHOL	63520	PERIOELEV	63521	ARCOFELEV	63522
PERIOOAZIM	63523	ARCOFAZIM	63524	PERIOOEC	63525
ARCOFOC	63526	PERIOORA	63527	ARCOFRA	63530
RADECOTIME	63531	AZELOTIME	63532	RAOTORA	63540
RAO100EC	63541	SYNTIMING	63542	103RA010	63776
104RA010	63777	AZIMOUT	64000	105RA010	64776
106RA010	64777	ELEVOUT	65000	107RA010	65776
10BRA010	65777	OPPOUT	66000	109RA010	66776
101RA010	66777	RECAZIM	67000	101RA010	67776
1012RA010	67777	RECELEV	70000	1D13RA010	70775
1014RA010	70776	RANGEOUT	70777	MCPFILLER	71000
0ATA2	71000	1015RA010	71776	1016RA010	71777
INTERAZIM	72000	AZOUTEQ	72000	1017RA010	72776
10IBRA010	72777	INTERELEV	73000	ELOUTEQ	73000
1019RA010	73776	1020RA010	73777	OPOUTEQ	74000
INTEROOPP	74000	1021RA010	74777	1022RA010	74777
AZINEQ	75000	AZIMIN	75000	1023RA010	75776
1024RA010	75777	ELEVIN	76000	ELINEQ	76000
1025RA010	76775	1026RA010	76776	INTERRANGE	76777
101SYSENT	77576	102SYSENT	77577	SYSENTRIES	77600
101SYSNAM	77676	102SYSNAM	77677	SYSNAMES	77700

END OF LISTING

## REFERENCES

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2. P. Stylos, "Coordinate Conversion for the Haystack Pointing System," Lincoln Laboratory Group Report 1964-71, (10 December 1964), DDC 609443.
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4. J. D. Drinan, A. A. Mathiasen, "Haystack Pointing System: Control Structure," Lincoln Laboratory Technical Note 1966-10, (9 March 1966).
5. A. A. Mathiasen, J. D. Drinan (editors), "Haystack Pointing System: Intercom," Lincoln Laboratory Technical Note 1965-39, (9 September 1965), DDC 615523.

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